ExxonMobil
Refining & Supply Company
Global Remediation
3700 W. 190th Street, TPT #2-7
Torrance, California 90504
(310) 212-3727 Office
(310) 212-1890 Facsimile
marla.d.guensler@exxonmobil.com

Maria D. Guensier Global Remediation Project Manager

**EXONMobil**Refining & Supply

April 14, 2005

Mr. Noman Chowdhury California Regional Water Quality Control Board Los Angeles Region 320 West 4<sup>th</sup> Street, Suite 200 Los Angeles, California 90013

Subject:

**Groundwater Monitoring Well Installation Report** 

Former Mobil Station 18MLJ 5005 North Long Beach Boulevard

Long Beach, California

CRWQCB File No. 908050452A

Mr. Chowdhury:

Enclosed for your review is a copy of the report for the installation of one on-site groundwater monitoring well at the above-referenced site. On March 16, 2005, ExxonMobil Oil Corporation's (ExxonMobil's) consultant, Environmental Resolutions, Inc. (ERI), directed the drilling and sampling of one additional on-site soil boring, which was completed as a groundwater monitoring well. This work was performed to assess the lateral extent of fuel constituents in soil and groundwater beneath the site. This report presents the results from soil and groundwater sampling, and summarizes the field procedures associated with the well installation activities. ERI prepared this report.

Please call the undersigned at (310) 212-3727 for any questions regarding the content of the report.

Sincerely,

Marla D. Guensler

Project Manager

Attachment:

Groundwater Monitoring Well Installation Report, Former Mobil Station 18MLJ, 5005 North Long Beach Boulevard, Long Beach, California, prepared by ERI

C: w/ attachment:

Ms. Carmen Piro, Long Beach City Department of Health and Human Sciences

C: w/o attachment:

Mr. George E. Salley, ERI

April 14, 2005

Ms. Marla D. Guensler ExxonMobil Oil Corporation 3700 West 190<sup>th</sup> Street, TPT #2-7 Torrance, California 90504

Subject:

**Groundwater Monitoring Well Installation Report** 

Mobil Station 18MLJ

5005 North Long Beach Boulevard

Long Beach, California

CRWQCB File No. 908050452A

#### Ms. Guensler:

Enclosed is the report for the installation of one groundwater monitoring well at the above-referenced site. On March 16, 2005, Environmental Resolutions, Inc. (ERI) directed the drilling and sampling of one on-site soil boring. The soil boring was completed as a groundwater monitoring well to assess the lateral extent of fuel constituents in soil and groundwater beneath the site. This report summarizes the field procedures for the well installation activities and presents the results from soil and groundwater sampling.

For any questions regarding the content of this report, please call the undersigned at (949) 457-8954.

Sincerely,

Environmental Resolutions, Inc.

George E. Salley

Senior Project Geologist

P.G. 6308

Enc:

ERI 316303.R03

Transmittal Letter



April 14, 2005

Ms. Marla D. Guensler
ExxonMobil Oil Corporation
3700 West 190<sup>th</sup> Street, TPT #2-7
Torrance, California 90504

Subject: Groundwater Monitoring Well Installation Report

Mobil Station 18MLJ 5005 North Long Beach Boulevard Long Beach, California CRWQCB File No. 908050452A

#### Ms. Guensler:

At the request of ExxonMobil Oil Corporation (ExxonMobil), Environmental Resolutions, Inc. (ERI) has prepared this report documenting the results of the installation of one on-site groundwater monitoring well on March 16, 2005 at the above-referenced site (Site Location Map, Plate 1). In a work plan submitted to the California Regional Water Quality Control Board – Los Angeles Region (CRWQCB) dated August 6, 2004, ExxonMobil proposed the installation of three off-site groundwater monitoring wells. In a letter dated November 30, 2004, the CRWQCB approved the work plan for off-site groundwater monitoring wells and required the installation of one additional on-site groundwater monitoring well. The purpose of this additional well is to further define the extent of the fuel constituents in the northeastern portion of the site. A copy of the CRWQCB letter is included in Appendix A.

This report contains the following sections:

- Site Description Provides a brief description of the site and the surrounding area.
- Field Activities Describes site-specific conditions and activities.
- Laboratory Analyses Outlines laboratory information and methods used to analyze the soil samples collected during this investigation.
- Analytical Results Discusses the soil analytical results from this investigation.

- **Recommendations** Presents recommendations to ensure the regulatory case associated with this site remains on a pathway for case closure with the CRWQCB.
- Limitations Describes report preparation and data limitations.

#### SITE DESCRIPTION

The subject site is an active Mobil service station which sells Mobil-brand gasoline, located at the northwestern corner of North Long Beach Boulevard and Del Amo Boulevard in Long Beach, California (Plate 1). The site facilities consist of a service station building containing a Mobil Mart food store. The fueling system consists of three unleaded-gasoline underground storage tanks (USTs), one diesel UST, seven fuel dispensers (six gasoline and one diesel), and the associated product piping. The site facilities are depicted on the Generalized Site Plan (Plate 2). The area surrounding the site consists of commercial businesses, apartments and residential housing. A Chevron service station is located south of the site across Del Amo Boulevard. A Shell service station is located on the southeastern corner of the intersection. A 7-Eleven food store and a McDonald's restaurant are located on the northeastern corner of the intersection.

#### **FIELD ACTIVITIES**

All field activities were conducted under the direct supervision of a State of California professional geologist and in accordance with ERI's site-specific health and safety plan, which was available at the job site during field activities. Field activities were also conducted in accordance with ERI's standard field protocol for groundwater monitoring well installation. A copy of the field protocol is included in Appendix B. The following sections describe the field activities undertaken during this investigation.

#### **Preliminary Activities**

Prior to the onset of drilling activities at the site, ERI obtained a well construction permit from the Long Beach Department of Health and Human Services. A copy of the permit is included in Appendix C. The CRWQCB was notified at least one week prior to the start of work. ERI contacted Underground Services Alert at least 48 hours prior to the start of work to mark buried utilities. Prior to drilling, GEOVision Geophysical Services of Corona, California, located and marked subsurface utilities near the boring locations using geophysical methods. The boring locations were also cleared for buried utilities in accordance with ExxonMobil's borehole clearance procedures using air excavation tools provided by Milestone Exploration, Inc. of Tustin, California.

#### **Drilling Procedures and Well Installation**

On March 16, 2005, an ERI field geologist directed the drilling and sampling of soil boring B7 which was completed as groundwater monitoring well MW7. The location of the well is shown on Plate 2. ERI's subcontractor, J&H Drilling, Inc. (J&H) of Anaheim, California, performed the drilling and well installation using a BK-55 drilling rig equipped with 10-inch diameter, continuous flight, hollow-stem augers. The well was

constructed using 4-inch inside diameter, schedule 40 polyvinyl chloride casing with a 0.020-inch slotted screen interval. The soil boring was drilled to a total depth of approximately 51.5 feet bgs, and was completed as a groundwater monitoring well with a 30-foot screened interval. Groundwater was first encountered during drilling at approximately 29.5 feet bgs. The well construction details are shown on the soil boring log included in Appendix D.

#### Soil Sampling

Soil samples were collected at 5-foot intervals starting at 10 feet bgs and continuing to the total depth of the boring. Each soil sample collected for laboratory analysis was preserved in the field in accordance with EPA Method 5035 protocol, properly labeled, entered onto a chain-of-custody record and placed in chilled storage for transport to an ExxonMobil-approved, state-certified laboratory.

#### Groundwater Monitoring Well Development, Sampling and Surveying

On March 17, 2005, J&H conducted well development activities for well MW7. On March 21, 2005, ERI collected groundwater samples from all wells, including the newly installed on-site well, in accordance with the quarterly groundwater monitoring and sampling program. Results of the groundwater monitoring well gauging are included in the quarterly report for first quarter 2005. Copies of the well development records are included in Appendix E.

On March 17, 2005, the newly installed well was surveyed by licensed land surveyor Calvada, Inc. of Corona, California, relative to an established benchmark of known elevation above mean sea level and in accordance with GeoTracker requirements. The well survey data is included in Appendix F.

#### Soil and Water Disposal

The drill cuttings, decontamination water generated during drilling activities, and purge water from well development were temporarily stored on site in Department of Transportation-approved, sealed 55-gallon drums. The drums of soil cuttings were subsequently transported to TPS Technologies' approved facility in Adelanto, California, and the drums of water were transported to Crosby & Overton's approved facility in Long Beach, California, for recycling. Copies of the non-hazardous waste manifests for soil and water recycling are included in Appendix G. Purge water generated during quarterly groundwater monitoring and sampling was bulked at ERI's ExxonMobil-approved transfer facility in Lake Forest, California, and later transported to Crosby & Overton. A non-hazardous waste manifest for this purge water will be submitted with the quarterly status report.

#### LABORATORY ANALYSES

The soil samples were submitted for chemical analysis to TestAmerica, Inc. of Nashville, Tennessee, an ExxonMobil-approved, state-certified analytical laboratory. Soil samples were analyzed for total petroleum hydrocarbons as gasoline and total petroleum hydrocarbons as diesel by EPA Method 8015B; and for benzene, toluene, ethylbenzene, total xylenes and fuel oxygenates by EPA Method 8260B. Fuel oxygenates analyzed included methyl tertiary butyl ether, ethyl tertiary butyl ether, tertiary amyl methyl ether and tertiary butyl alcohol. Soil samples were also analyzed for the fuel oxygenate di-isopropyl ether by EPA Method 8260/SA05-77.

#### ANALYTICAL RESULTS

Soil analytical results are shown on the Soil Sample Analyses Map - 03/16/05 (Plate 3), and are summarized in Table 1. The laboratory reports and chain-of-custody records are included in Appendix H. Initial groundwater analytical results from newly installed well MW7 will be included in the quarterly report for first quarter 2005.

#### **RECOMMENDATIONS**

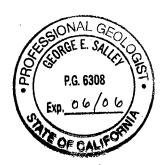
ERI recommends that new on-site wells MW7 be added to the existing quarterly groundwater monitoring and sampling program. The results from monitoring and sampling will be reported by the fifteenth day following the end of each quarter.

#### **LIMITATIONS**

For any reports cited that were not generated by ERI, the data taken from those reports is used "as is" and is assumed to be accurate. ERI does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these reports.

This report was prepared in accordance with generally accepted standards of environmental, geological and engineering practices in California at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

For any questions concerning the content of this report, please contact Mr. George E. Salley at (949) 457-8954.



Sincerely,

Environmental Resolutions, Inc.

MAJO

E- Solle

Kyle L. Gadley

Senior Staff Geologist

George E. Salley

Senior Project Geologist

P.G. 6308

#### **Enclosures:**

Plate 1 Site Location Map

Plate 2 Generalized Site Plan

Plate 3 Soil Sample Analyses Map – 03/16/05

Table 1 Soil Analytical Results

Appendix A Correspondence

Appendix B ERI Field Protocol

Appendix C Well Construction Permit

Appendix D Boring Log

Appendix E Well Development Records

Appendix F Well Survey Data

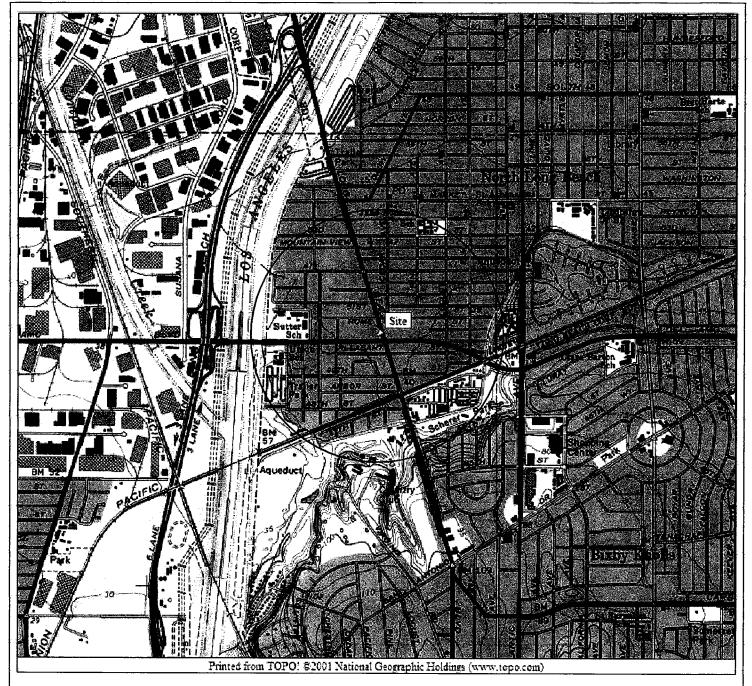
Appendix G Non-Hazardous Waste Manifests

Appendix H Laboratory Reports and Chain-of-Custody Records

#### REFERENCES

Environmental Resolutions, Inc., June 9, 2003, Letter Report for the Installation of Three Groundwater Monitoring Wells at Mobil Station 18-MLJ, 5005 North Long Beach Boulevard, Long Beach, California.

United States Geological Survey, 1964 (photorevised 1981), Long Beach, California, Quadrangle 7.5 Minute Series Topographic Map.



FN 3163TOPO

#### **EXPLANATION**



1/2-mile radius circle

# APPROXIMATE SCALE 0.5 1 mile

SOURCE: Modified from a map provided by National Geographic's TOPO!



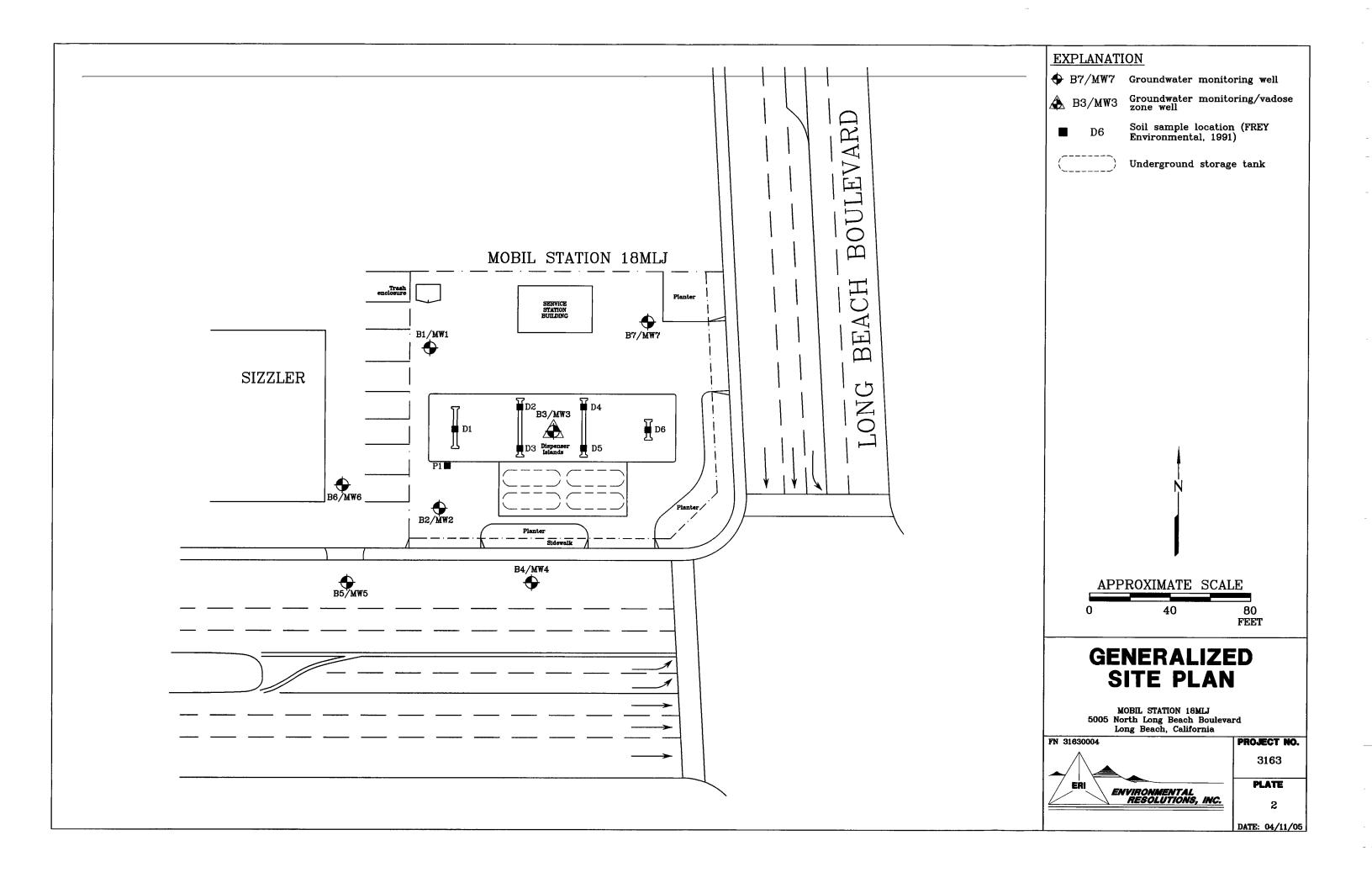
### SITE LOCATION MAP

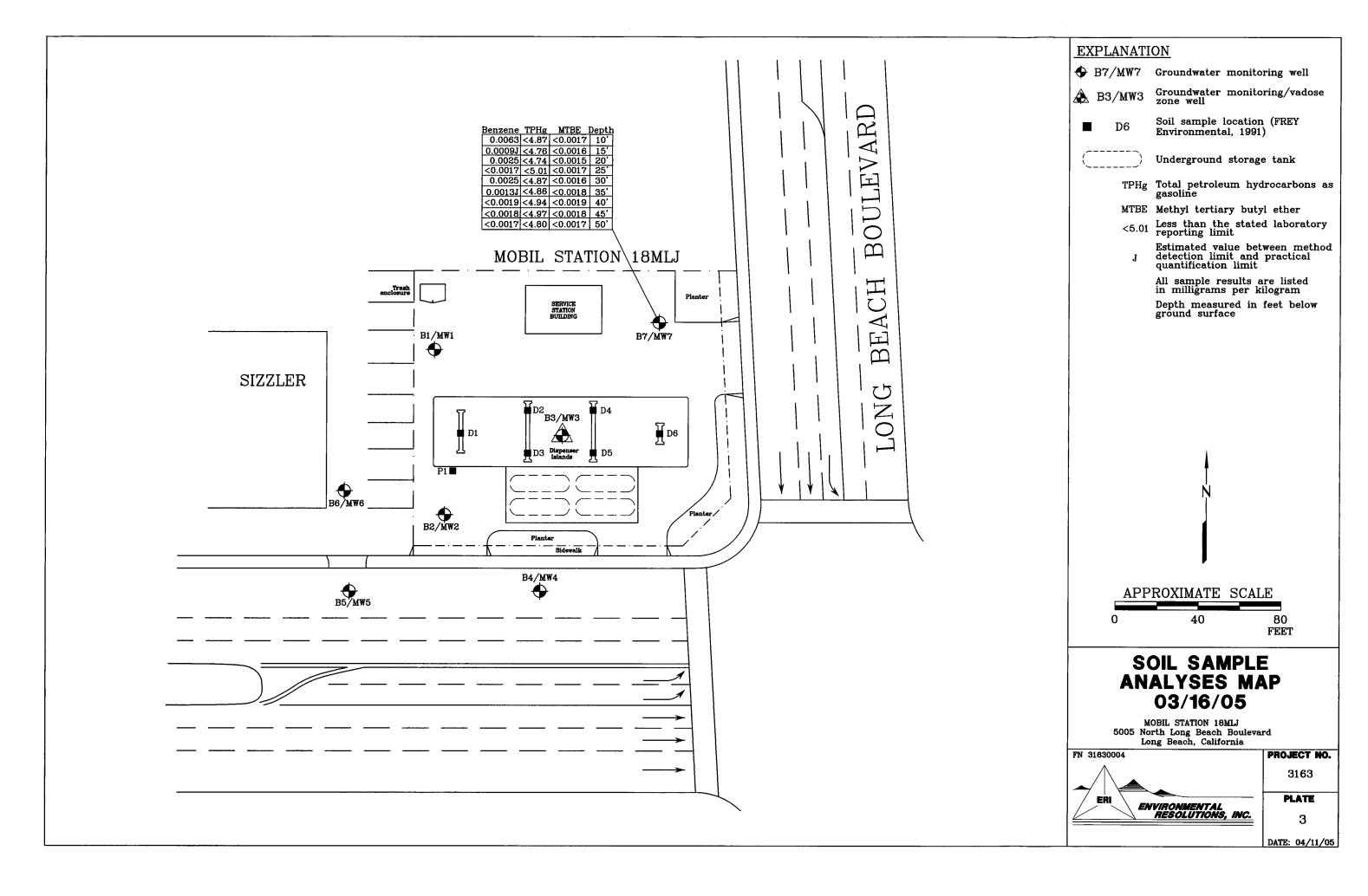
MOBIL STATION 18MLJ 5005 North Long Beach Boulevard Long Beach, California PROJECT NO.

3163

PLATE

1





#### TABLE 1

#### SOIL ANALYTICAL RESULTS

#### **MOBIL STATION 18MLJ**

### 5005 NORTH LONG BEACH BOULEVARD LONG BEACH, CALIFORNIA

ERI 3163

Sample	Depth			Ethyl-	Total									
Number	(feet)	Benzene	Toluene	benzene	Xylenes	TPHg	TPHd	MTBE	TBA	DIPE	ETBE	TAME	Ethanol	Methanol
Samples collecte	d by Enviro	nmental Res	solutions, I	nc. on Mar	ch 16, 2005	. Conce	ntrations	reported in	n mg/kg.					
S-10-B7	10	0.0063	0.0035	0.0026	0.0113	<4.87	67.7	<0.0017	<0.0427	<0.0017	<0.0017	<0.0017	<0.171	<5.00
S-15-B7	15	0.0009 J	<0.0016	<0.0016	<0.0016	<4.76	<1.00	<0.0016	< 0.0394	<0.0016	<0.0016	<0.0016	<0.158	<5.00
S-20-B7	20	0.0025	0.0075	0.0097	0.0567	<4.74	<1.01	<0.0015	< 0.0369	<0.0015	<0.0015	<0.0015	< 0.147	<5.00
S-25-B7	25	<0.0017	<0.0017	<0.0017	< 0.0017	<5.01	<1.00	<0.0017	<0.0427	<0.0017	<0.0017	< 0.0017	< 0.171	<5.00
S-30-B7	30	0.0025	<0.0016	0.0011 J	0.0049	<4.87	6.37	<0.0016	<0.0408	< 0.0016	< 0.0016	<0.0016	< 0.163	<5.00
S-35-B7	35	0.0013 J	<0.0018	<0.0018	<0.0018	<4.86	<1.01 J	<0.0018	<0.0450	<0.0018	<0.0018	<0.0018	< 0.180	<5.00
S-40-B7	40	<0.0019	<0.0019	<0.0019	<0.0019	<4.94	<1.01 J	<0.0019	<0.0465	< 0.0019	<0.0019	<0.0019	<0.186	<5.00
S-45-B7	45	<0.0018	<0.0018	<0.0018	0.0012 J	<4.97	<1.01 J	<0.0018	<0.0456	<0.0018	<0.0018	<0.0018	<0.182	<5.00
S-50-B7	50	<0.0017	<0.0017	<0.0017	<0.0017	<4.80	<1.00 J	<0.0017	<0.0420	<0.0017	<0.0017	<0.0017	<0.168	<5.00

#### **EXPLANATION:**

mg/kg = milligrams per kilogram

DIPE = di-isopropyl ether

ETBE = ethyl tertiary butyl ether

MTBE = methyl tertiary butyl ether analyzed by Environmental Protection Agency Method 8260B

TAME = tertiary amyl methyl ether

TBA = tertiary butyl alcohol

TPHd = total petroleum hydrocarbons as diesel

TPHg = total petroleum hydrocarbons as gasoline

J = estimated value below report limit

<5.01 = not detected at or above the stated laboratory reporting limit

### **APPENDIX A**

**CORRESPONDENCE** 

### California Regional Water Quality Control Board

Los Angeles Region

Terry Tamminen
Secretary for
Environmental
Protection

Over 54 Years Serving Coastal Los Angeles and Ventura Counties Recipient of the 2001 Environmental Leadership Award from Keep California Beautiful Arnold Schwarzenegger
Governor

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.waterboards.ca.gov/losangeles

Received by ER on 2/25/05

November 30, 2004

Ms. Marla Guensler ExxonMobil Refining & Supply 2532 North 4<sup>th</sup> Street, PMB 343 Flagstaff, AZ 86004

UNDERGROUND TANK PROGRAM – SOIL AND GROUNDWATER INVESTIGATION MOBIL STATION #18-MLJ 5005 NORTH LONG BEACH BOULEVARD, LONG BEACH (FILE NO. 908050452A)

Dear Ms. Guensler:

Thank you for your submission of the "Quarterly Report for the Third Quarter 2004" dated October 15, 2004, and "Work Plan for the Installation of Three Groundwater Monitoring Wells" dated August 6, 2004, prepared by your consultant, the Environmental Resolutions (ERI), Inc. for the referenced site. In reference to the above documents, we have the following comments:

#### I. Additional Site Assessment

The recent groundwater monioring report indicated that high concentration levels of petroleum hydrocarbon (up to 8,260 micrograms per liter of TPHg, 1,220 micrograms per liter of TPHd, 60.4 micrograms per liter of benzene), and methyl tert-butyl-ether (up to 920 micrograms per liter) were detected in the groundwater and groundwater flow direction is southwest. There is no groundwater monitoring well located downgradient from monitoring well MW2 and the groundwater plume has not been adequately defined. Therefore, the workplan proposes to install three additional groundwater monitoring wells at the off-site to further assess the downgradient extent of the petroleum fuel hydrocarbon plume. We concur with your workplan, provided you meet the following conditions:

- 1. Since there is no groundwater monitoring well currently located up-gradient from monitoring well MW3 and the groundwater plume has not been adequately defined as a result, you are also required to install an additional monitoring well approximately 45 feet northeast of MW3. If data indicates that these wells are not adequate to fully define the dissolve hydrocarbons plume, you are required to install additional monitoring wells, during this phase of hydrogeologic assessment.
- 2. Soil samples shall be collected per EPA Method 5035 at a minimum of five-foot intervals and logged from on-site boring location.
- 3. The construction, development, and abandonment of groundwater monitoring wells must comply with requirements prescribed in the California Well Standards (Bulletin 74-90), published by the California Department of Water Resources (can be seen at <a href="https://www.dpla2.water.ca.gov">www.dpla2.water.ca.gov</a> and go to "groundwater").

California Environmental Protection Agency

- 4. <u>All</u> groundwater monitoring wells must be surveyed in to a benchmark of known elevation above mean sea level by a licensed land surveyor or registered civil engineer. Prior to collecting groundwater samples, free product thickness (if present) must be determined and the depth to water must be measured in all wells to be sampled. The wells are to be properly purged until the temperature, conductivity, and pH stabilize, and the water is free of suspended and settleable matter, before samples are collected for analysis. Any wells containing free product must be purged to remove any standing product, allowed to equilibrate to prepurged levels and free product thickness measured and removed.
- 5. Soil and groundwater samples must be analyzed by Cal-LUFT GC/FID or Cal-LUFT GC/MS Method for total petroleum hydrocarbons as gasoline (TPH<sub>G</sub>), total petroleum hydrocarbons as diesel (TPH<sub>D</sub>); and by EPA Method 8260B for BTEX, and fuel oxygenate compounds including methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), and tertiary butyl alcohol (TBA). Ethanol is also required and shall be analyzed by either method above. The analytical detection limits must conform to the Regional Board General Laboratory Testing Requirements (6/00) (www.waterboards.ca.gov/losangeles/docs/lab req 6-00.doc). All respective analytical methods must be certified by the California Environmental Laboratory Accreditation Program (ELAP). All analytical data must be reported by a California-certified laboratory.

#### II. General Requirements

- 1. All necessary permits must be obtained from the appropriate agencies prior to the start of work.
- 2. All reports must conform to the "Guidelines for Report Submittals" published by the Los Angeles County Department of Public Works.
- 3. All work must be performed by or under the direction of a registered geologist, certified engineering geologist, or registered civil engineer. A statement is required in the report that the registered professional in direct responsible charge actually supervised or personally conducted all the work associated with the project. All technical submittals must contain a wet ink signature and seal by one of the registered professionals.
- 4. Notify the regional Board at least seven days prior to commencing the field work so that our staff may be present.

You are required to submit a technical report detailing this phase of the investigation to this Regional Board by **April 15, 2005**. Failure to submit the required technical report by the due date, may result in an appropriate enforcement action by the Regional Board.

If you have any questions concerning this matter, please call Mr. Noman Chowdhury at (213) 576-6704.

Sincerely,

Gregg Kwey, P.E.

Senior Water Resource Control Engineer

Cc: Ms. Yvonne Shanks, SWRCB, Underground Storage Tank Cleanup Fund

Ms. Nancy Mastumoto, Water Replenishment District of Southern California

Ms. Carmen Piro, Long Beach Department of Health and Human Services

Mr. George Salley, Environmental Resolutions, Inc.

### **APPENDIX B**

**ERI FIELD PROTOCOL** 

### Environmental Resolutions, Inc. Groundwater Monitoring Well Installation Field Protocol

#### **Preliminary Activities**

Prior to the onset of drilling activities at the site, ERI obtains a well construction permit from the appropriate agency. Advance notification is made as required by the appropriate governing agency at least one week prior to the start of work. ERI contacts Underground Services Alert at least 48 hours prior to the start of work to mark buried utilities. Prior to drilling, the well borehole location is cleared in accordance with the client's procedures for utility clearance of boreholes. The fieldwork is conducted under the updated site-specific safety plan prepared for this project, which is available at the job site during field activities.

#### Soil Sampling Procedures

The borehole is advanced with a hollow-stem auger. ERI collects discrete soil samples from the borehole at the capillary fringe and at 5-foot intervals using a California split-spoon sampler containing three 6-inch long brass sleeves. The borehole is advanced to just above the desired sampling depth. The sampler is then placed inside the auger and driven through the center of the auger to a depth of 18 inches past the bit of the auger. The sampler is driven into the soil with a standard 140-pound hammer repeatedly dropped from a height of 30 inches onto the sampler. The number of blows required to drive the sampler each 6-inch increment is recorded on the boring log. The blow count information is recorded for use in evaluating the lithology at the site. The sampler is then retrieved from the borehole. The brass sleeves are removed from the sample barrel, and the lower-most sample sleeve is immediately sealed with Teflon<sup>TM</sup> tape, capped, and transported to a State of California-certified laboratory. The samples are transferred under proper chain-of-custody protocol. An ERI geologist describes the soil encountered during the assessment according to the Unified Soil Classification System and records the description on the boring log.

#### Field Screening Procedures

ERI performs a field evaluation for concentrations of volatile fuel constituents in the soil samples collected during the assessment. ERI places the contents of the middle brass sleeve into a plastic re-sealable bag. The bag is placed away from direct sunlight for approximately 20 minutes. After approximately 20 minutes, the tip of a Microtip photo-ionization detector (PID) calibrated to 50 parts per million hexane is inserted through the plastic bag to measure organic vapor concentrations in the headspace. The PID measurements are recorded on the boring log. Instruments such as the PID are useful for evaluating relative concentrations of volatilized hydrocarbons, but they do not measure the concentration of petroleum hydrocarbons in the soil matrix with the same precision as laboratory analysis.

#### **Groundwater Monitoring Well Construction**

The groundwater monitoring well is completed using schedule 40, polyvinyl chloride (PVC) casing. The well is constructed with slotted casing in its screened interval and completed with blank casing to within 6 inches of surface grade. The annular space of the well is backfilled with Monterey sand from the total depth to approximately 2 feet above the top of the screened casing. A hydrated granular bentonite seal is placed on top of the sand filter pack. The well is completed to surface grade with a 1-foot thick concrete pad. A traffic-rated well vault and locking cap for the well casing is installed on the well to protect against surface-water infiltration. Site-specific well construction details including casing diameter and slot size are shown on the respective well construction detail.

#### Well Development, Groundwater Sampling and Well Surveying

ERI personnel use a submersible pump to develop the newly installed well. Prior to development, the pump is decontaminated by allowing it to run and recirculate while immersed in a non-phosphate solution followed by successive immersions in potable water and de-ionized water baths. The well is purged until sufficient well casing volumes are removed so that pH, conductivity, and temperature levels stabilize in the purge water.

Following development, groundwater within the well is allowed to recharge to near its original static water level. After near equilibrium conditions are re-established, a new disposable bailer is slowly lowered past the air/water interface in the well and a water sample is collected and checked for the presence of liquid phase hydrocarbons, sheen, or emulsions. The water sample is then emptied into laboratory-supplied, 40-milliliter, glass volatile organic analysis (VOA) vials with hydrochloric acid added as a preservative. Each VOA vial is slowly filled with the retrieved water sample until no headspace remains, and then promptly sealed with a Teflon-lined cap, checked for the presence of bubbles, labeled, entered onto a chain-of-custody record, and placed in chilled storage. Laboratory-supplied trip blanks accompany the water samples as a quality assurance/quality control procedure. The samples are kept in chilled storage and transported under proper chain-of-custody protocol to a client-approved, state-certified laboratory for analysis.

The newly installed well is surveyed by a licensed land surveyor relative to an established benchmark of known elevation above mean sea level.

#### **Decontamination Procedures**

ERI decontaminates soil and water sampling equipment between each sampling event with a non-phosphate solution, followed by tap water and de-ionized water rinses. Downhole drilling equipment is steam-cleaned prior to drilling the borehole and at completion of the borehole.

#### Waste Treatment and Soil Disposal

Soil cuttings generated from the drilling of the borehole are stored on site in properly labeled, Department of Transportation-approved, 55-gallon drums. The soil is removed from the site and transported to a client-approved recycling facility for disposal. Decontamination fluids and purge water from well development and sampling activities are stored on site in 55-gallon drums and subsequently treated with a permitted mobile carbon treatment system. The system operates under a national pollution discharge elimination system permit.

### **APPENDIX C**

**WELL CONSTRUCTION PERMIT** 



### CITY OF LONG BEACH N APR 1 2 2005

**DEPARTMENT OF HEALTH & HUMAN SERVICES** 

2525 Grand Avenue Long Beach, CA 90815-1765 (562) 570-4134 FAX (562) 570-4038

#### **WELL PERMIT**

Permit # 1089

Date: April 8, 2005

All work must be completed in accordance with Water Well Bulletin 74-81 and 74-90

**Site Address:** 

5005 N. Long Beach Blvd, Long Beach, CA

Owner:

Exxon Mobil Oil Corporation

**Owner Address:** 

3700 W. 190<sup>th</sup> Street TPT #2-7, Torrance CA 90504

**Consulting Firm:** 

Environmental Restoration Inc.,

**Consulting Firm Address:** 

20372 N Sea Circle, Lake Forest CA 92630

**Drilling Company:** 

J & H Drilling

**Drilling Company Address:** 

1014 E. South Street, Anaheim CA 92805

Method of Construction/Destruction: see attached

Number of Wells/Borings:

New Well Construction-Monitoring (1)

This permit valid for one year from date above

Steven Nakauchi, REHS IV

Cross-Connection/Water Program



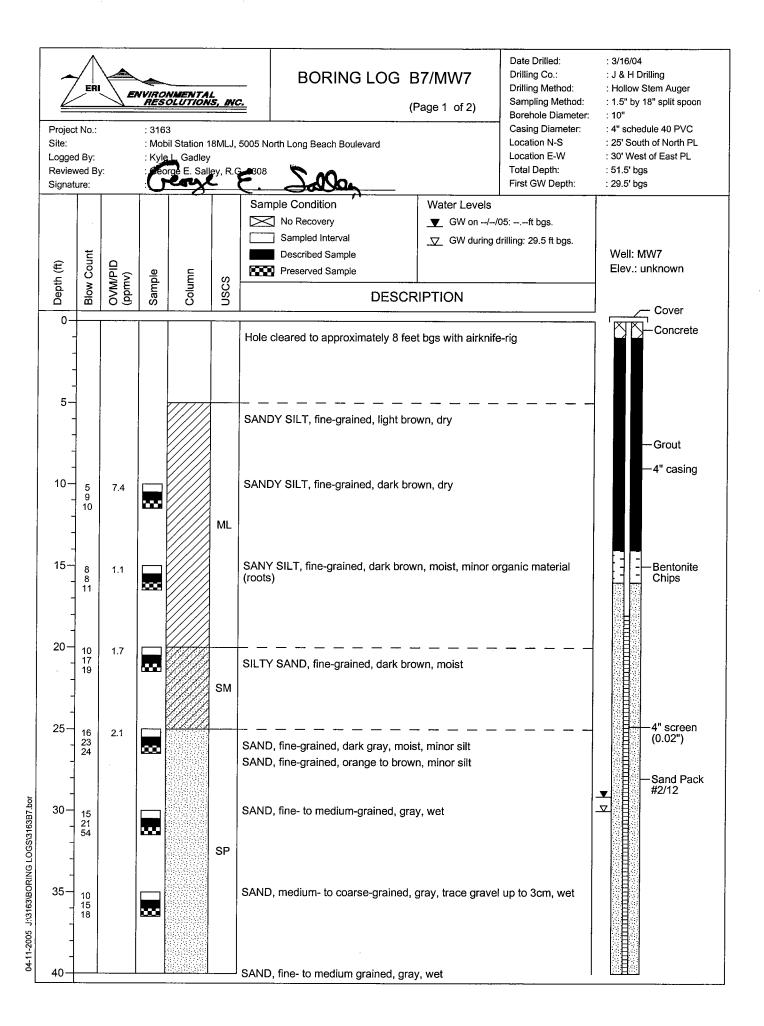
### CITY OF LONG BEACH DEPARTMENT OF HEALTH & HUMAN SERVICES

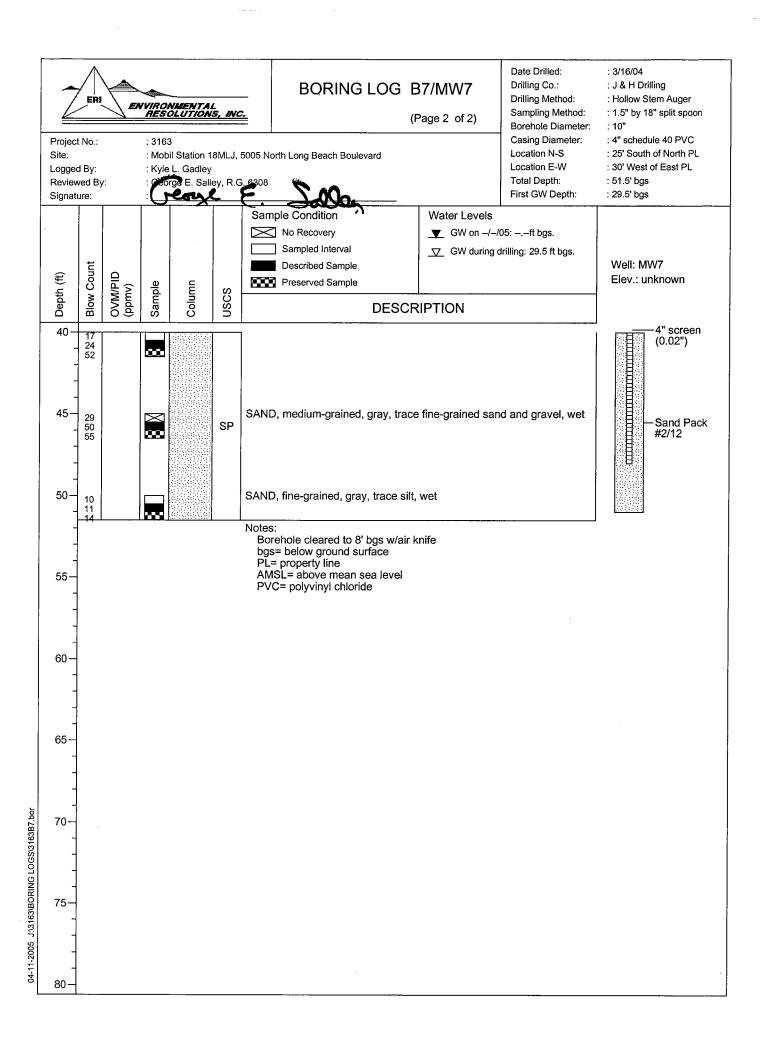
### APPLICATION FOR WELL PERMIT

		Date: 3-4-05
Type of Permit: (check)  ☑ New Well Construction ☐ Destruction	Type of Well: (check)  ☑ Monitoring (l ພell) ☐ Cathodic ☐ Private Domestic ☐ Public Domestic	☐ Irrigation ☐ Soil Boring ☐ Vapor Extraction ☐ Other
Well Owner Name: Exxon Mobil Oil Corporation Address: 3700 W. 190 St., TPT #2-7  City: Torrance, CA 90504  Phone: 310 - 212 - 372 7  Consulting Firm: Environmental Resolutions, Inc.	Site Address Sous N, Long R Site Map	
Address: 20372 N. Sea Circle  City: Lake Forest, CA 92630  Phone: 949-457-8950  Drilling Company: JEH Drilling	Construction/Destruction Me	othod
Address: 1014 E South St.  City: Avaleim, CA 92805  Phone: 714 - 535 - 0392	Type of casing, method of sea. (Use additional sheet or attach	ling, etc. ments)
Proposed Start Date: 3-16-05	Construction Dra	agram
I hereby agree to comply in every respect will all regulations of the Long Beach Department of Health and Human Services and with all ordinances and laws of the City of Long Beach and of the State of California pertaining to well construction, reconstruction and destruction. Upon completion of well and within ten days thereafter, I will furnish the Long Beach Department of Health and Human Services with a complete log of the well, giving date drilled, depth of well, all perforations in casing, and any other data deemed necessary by other City agencies.	Disposition of Application: (For Office LApproved with Conditions  Denied  If denied or approved with conditions, in here:	Jse Only)  Date: 4_8-05
Applicants Signature: Russell Pace	Stum M. Nakau	l.

**APPENDIX D** 

**BORING LOG** 





### **APPENDIX E**

**WELL DEVELOPMENT RECORDS** 

#### GROUNDWATER MONITORING WELL DEVELOPMENT LOG CLIENT NAME: ExxonMobil 0.163 FOR A 2" WELL ERI JOB#: 3163\_\_\_\_ SITE LOCATION: Mobil Station MLI 0.652 FOR A 4" WELL FIELD CREW: K. Gadley בט רול: DATE: "כט 1.167 FOR A 6" WELL DEPTH TO CASE DEPTH TO CASE PRG WELL# TIME WATER WELL VOL VOL COND. TEMP Turbidity DIA pН 4" 29.15 47.6 1202 120 725 mw7 ~ 415 10 2672 22.7 7.47 1333 B03 MW7 ~ 112 20 22.1 7.22 2400 1301 806 mw7 12112 1290 30 22.0 7.15 808 2580 mw7 ~343 21.8 1290 811 40 2581 7.14 mw7 24 7.17 50 2545 1274 817 21.9 mw7 5 7.19 1284 820 2576 21.7 600 MW7 5415 21.7 1262 822 70 2527 7.13 mw7 ~6315-823 80 2535 21.6 F1.4 1244 MW7 7/12 825 90 2524 21.7 7.13 1255 mw7 -8113 7.15 826 100 2510 21.4 1250 mw7 19 834 2485 20.7 110 1244 7.26 MW7 834 10 120 2521 21,3 7.01 1258 MW7 210415 837 2490 130 21.6 7.01 1245 mw7 411315 837 140 2492 21.5 7.01 1241 MW7 12112 841 2478 21.1 7.01 150 1231 mw7 2/3/13 21.4 1243 845 160 2496 7.01 mw7 ~13 314 479 165 2473 21,4 1236 846 29.15 7.01 mw7 COMMENTS: Depin to water After propy = 29.15 -1.11. A to Well Atter prying = 47.9

### **APPENDIX F**

**WELL SURVEY DATA** 

GLOBAL_ID	FIELD_PT_NAME	STATUS	GW_MEAS_DATE	DTFPROD	DTW	RISER_HT	TOT DEPTH	GW MEAS	DESC
	MW-4	ACT				-0.30			
	MW-5	ACT				-0.41			
	MW-6	ACT				-0.43	'		
	MW-7	ACT				-0.30			

GLOBAL ID	FIELD PT NAME	FIELD PT CLASS	XY SURVEY DATE	LATITUDE	LONGITUDE	XY METHOD	XY DATUM	XY ACC VAL	XY SURVEY ORG	GPS EQUIP TYPE	XY SURVEY DESC
	MW-4	MW	11/05/2004	33.8468292	-118.1943703	CGPS	NAD83	30	CAL VADA SURVEYING, INC.	L530	NGS POINT DY 0777
	MW-5	MW	11/05/2004	33.8468256	-118.1946703	CGPS	NAD83	30	CAL VADA SURVEYING, INC.	L530	NGS POINT DY 0777
L	MW-6	MW	11/05/2004	33.8469350	-118.1946978	CGPS	NAD83	30	CAL VADA SURVEYING, INC.	L530	NGS POINT DY 0777
L	MW-7	MW	03/17/2005	33.8471747	-118.1942397	CGPS	NAD83	30	CAL VADA SURVEYING, INC.	L530	NGS POINT DY 0777

GLOBAL_ID	FIELD_PT_NAME	ELEV_SURVEY_DATE	<b>ELEVATION (TOC)</b>	ELEV_METHOD	ELEV_DATUM	ELEV_ACC_VAL	ELEV SURVEY ORG	RISER HT	ELEV DESC
	MW-4	11/05/2004	39.10	DIG	29	3	CAL VADA SURVEYING, INC.	-0.30	NGS POINT DY 0777
	MW-5	11/05/2004	38.72	DIG	29	3	CAL VADA SURVEYING, INC.	-0.41	NGS POINT DY 0777
	MW-6	11/05/2004	39.21	DIG	29	3	CAL VADA SURVEYING, INC.	-0.43	NGS POINT DY 0777
Ĺ	MW-7	03/17/2005	41.14	DIG	29	3	CAL VADA SURVEYING, INC.	-0.30	NGS POINT DY 0777

### **APPENDIX G**

**NON-HAZARDOUS WASTE MANIFESTS** 

### **NON-HAZARDOUS WASTE DATA FORM**

	ID.
	Waste Auministration Conditions MOSIL 18-MIJ
	NAME PROFILE
	ADDRESS 16525 Northchase Drive, Room 919A 5005 N LONG BEACH RIVER TO THE PROPERTY OF THE PROPE
H	CITY, STATE, ZIP HOUSTON, TX 77050 LONG BEACH, CA PHONE NO. ( )
Ď.	d dat allows weren
E E	CONTAINE IS. NO.
	TYPE:   TANK DUMP DRUMS CARTONS OTHER PURGED GROUNDWATER
Š. V	WASTE DESCRIPTION NON-HAZARDOUS WATER GENERATING PROCESS and/or DECON RINSATE
0	COMPONENTS OF TRAFF. II ORS!
	1
JAMO	2. TPH 6.
	3
8	8
	4
	WEAR ALL APPROPRIATE PROTECTIVE CLOTHING
	HANDLING INSTRUCTIONS.
	THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.  Larry Moothert BESI on behalf of the following the second of the s
	NON-HAZARDOUS.  DATE  TYPED OR PRINTED FULL NAME & SIGNATURE  DATE
	EPA (1997) (1997
8	NAME SES!
	ADDRESS SERVICE ORDER NO
S S	CITY, STATE, ZIP LAKE FOREST, CA 92610 PICK UP DATE
	7
	PHONE NO. 949-460-5200
	TRUCK, UNIT, I.D. NO.  TYPED OR PRINTED FULL NAME & SIGNATURE  FFA THE STATE OF THE
	CROSBY AND OVERTON
	NAME
	ADDRESS
	CITY, STATE, ZIP LONG BEACH, CA 90813
	567-522-5445
	PHONE NO.
D H	10# 26732  Typed or Printed Full NAME & SIGNATURE  DATE
	GEN OLD/NEW L A TONS
	TRANS S B
	RT/CD HWDF DISCREPANCY
4277 11 777 77	C/Q NONE DISCREPANCY

Date of Shipment	Saldament of the State of the	Responsible for P		Transport	lous Soils er Truck #:	Facility #:	Give	n by TPS:		Loa
-			ayment.	10		A07		2381	23	01
031222 Generator's Name	oos	ERY ddress:		~ر٠	Generator's P		(	enerator's US	EPA ID No.	
Generator's Name	and bumig A	:			281-654	-8478				
Waste Adr	ninistrati	ion Coordinat	oor		Person to Cor	ntact:				
		iste Managen		ip	7.7/1			Customer Accou	int Number w	rith TP
		Drive, Room	919A		FAX#:			Justomer Precor		
Houston, Consultant's Nam					Consultant's	Phone #:		· · · · · · · · · · · · · · · · · · ·	2	
Consultant s Nam	e and billing A	Address.		•		\$				· A.4
·		•		16.	Person to Con	ntact:		•		
·		•		A. Carrier	FAX#:	N		Customer Accor	unt Number w	vith TI
					rax#:			545.011.02		
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Generation Site (1	ransport from	y. Thank o man coss	- X 9	All god				Levels	<u></u>	
Mobil 18-	MLJ		No.		Person to Co	ntact:		IPH Levels	Take W	
	ž	CH BLVD.		No. of the last of	FAX#:	·. ·		AVG.		
LONG BEA	ACH, CA				rax#:			Levels	_	
Decimated Facilit	ty (Transport t	to): (name & address)			Facility Phor	ne #:		Facility Permit	Numbers	
		gerie :			800-860	2-8001				
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12328 HI	, **	and the second s			DELLEN FAX#:	A JEFFREY		<i>(</i> *)	· · · ·	
ADELANT	U, CA 97	A301			760-24	5-8004				
Transporter Nam								- / -	JS EPA ID No.	
	e and Mailing	Address:			Transporter'		· ·			
3	e and Mailing	Address:			949-46	0-5200		CAD98	3358468:	
B.E.S.I.		•			949-46 Person to Co	0-5200 ontact:			3358468: OOT No.:	
B.E.S.I. 25971 TO	)WNE CE	NTRE DRIVE			949-46 Person to Co	0-5200	r	CAD98 Transporter's I	3358468: OOT No.: 7	1.
B.E.S.I.	)WNE CE	NTRE DRIVE	SI#1108	52.02	949-464 Person to Co	0-5200 ontact: MOOTHAR	<b>T</b>	CAD98 Transporter's I 45064 Customer Acco	3358468. OOT No.: 7 ount Number v	<b>i.</b> with T
B.E.S.I. 25971 TO	WNE CE	NTRE DRIVE	SI#1108 Contaminate		949-464 Person to Co LARRY I FAX#: 949-45	0-5200 ontact: MOOTHAR	Γ	CAD98 Transporter's E 45064 Customer Acco	3358468. OOT No.: 7 ount Number v	<b>i.</b> with T
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B.E.S.I. 25971 TO LAKE FOR Description	WNE CE	NTRE DRIVE 92610 BE Moisture Content	Contaminate	ed by: App	949-464 Person to Co LARRY FAX#: 949-46  rox. Qty: D	0-5200 ontact: MOOTHAR 0-5210	Γ	CAD98 Transporter's I 45064 Customer Acco 10001 Gross Weight	3358468. OOT No.: 7 ount Number v	with T
B.E.S.I. 25971 TO LAKE FOR  Description  Sand Cay Cay Sand Cay  Sa	OWNE CEREST, CA	Moisture Content  0 - 10%	Gas Diesel Cother Coas Diesel	ed by: App	949-464 Person to Co LARRY   FAX#: 949-46	0-5200 ontact: MOOTHAR 0-5210	Γ	CAD98 Transporter's I 45064 Customer Acco 10001 Gross Weight	3358468 OT No.: 7 ount Number v 53 Tare Weight	with T
B.E.S.I. 25971 TO LAKE FOR  Description  Sand Called Calle	of Soil  Organic O  Organic O  Organic O  Organic O	0 - 10% 0 - 20% - over 0 - 0 - 20% - over 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0	Contaminate  Gas  Diesel  Other	ed by: App	949-464 Person to Co LARRY FAX#: 949-46  rox. Qty: D	0-5200 ontact: MOOTHAR 0-5210	Γ	CAD98 Transporter's I 45064 Customer Acco 10001 Gross Weight	3358468 OT No. 7 Pount Number of State Weight of State Weight of State Weight of State of	with T
B.E.S.I. 25971 TO LAKE FOR  Description  Sand □ CO Clay □ CO List any exception to	OWNE CEREST, CA	Moisture Content  0 - 10%	Gas Diesel Cother Cothe	ed by: App	949-460 Person to Co LARRY   FAX#: 949-460 rox. Qty: D	D-5200 Ontact: MOOTHAR  O-5210 escription of D	elivery	CAD98 Transporter's I 45064 Customer Accc 10001 Gross Weight	3358468: OOT No.: 3 Ount Number 1 53 Tare Weight 2/170	with T
B.E.S.I. 25971 TO LAKE FOR  Description  Sand □ CO Clay □ CO List any exception to	OWNE CEREST, CA	Moisture Content  0 - 10%	Contaminate  Gas Diesel Other  Gas Diesel Other  Cother	ed by: App	949-460 Person to Co LARRY   FAX#: 949-45 rox. Qty: D	0-5200 ontact: MOOTHAR 0-5210 escription of Di	elivery	Transporter's I 45064 Customer Accc 10001 Gross Weight	3358468: OOT No.: 3 Ount Number of S3 Tare Weight 24120	Net 1
B.E.S.I. 25971 TO LAKE FOR  Description  Sand	OWNE CEREST, CA	0 - 10% 0 - 20% - over 0 - 0 - 20% - over 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0	Contaminate  Gas Diesel Other  Gas Diesel Other  Cother	ed by: App	949-460 Person to Co LARRY   FAX#: 949-45 rox. Qty: D	0-5200 ontact: MOOTHAR 0-5210 escription of Di	elivery	Transporter's I 45064 Customer Accc 10001 Gross Weight	3358468: OOT No.: 3 Ount Number of S3 Tare Weight 24120	Net    Soil I
B.E.S.I. 25971 TO LAKE FOR  Description  Sand	of Soil  Organic O Other O Oth	Moisture Content  0 - 10%   10 - 20%   20% - over   0 - 10%   20% - over,   20% - over	Gas Diesel Cother Cothe	hat the soil	Person to Co LARRY FAX#: 949-45  Tox. Qty: D  Treferenced here above and noth	o-5200 ontact: MOOTHAR  0-5210 escription of Di ein is taken ent ning has been a	elivery	Transporter's I 45064 Customer Accc 10001 Gross Weight	3358468: OOT No.: 3 Ount Number of S3 Tare Weight 24120	Net 32
B.E.S.I. 25971 TO LAKE FOR  Description  Sand	of Soil  Organic O  Other O  oritems listed ab  d/or consultated and certificates	Moisture Content  0 - 10%	Contaminate  Gas Diesel Other  Gas Diesel Other  I/We certify to Generation S  Consultar	hat the soil	Person to Co LARRY FAX# 949-45  Tox. Qty: D  Treferenced here above and noth	o-5200 ontact: MOOTHAR  o-5210 escription of Di ein is taken ent ning has been a	elivery irely from t	Transporter's I 45064 Customer Accc 10001 Gross Weight  (SSUO)  hose soils descript to such soil	3358468: OOT No.: 3 Ount Number 93 Tare Weight 24120  2(3) Cribed in the that would	Net 32
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B.E.S.I. 25971 TO LAKE FOR  Description  Sand	of Soil  Organic O  Other O  O	Moisture Content  0-10% 10-20% 20%-over 0-10-20% 20%-over 20%-over.  ant's certification: ed by me/us for the  Generator  I/We acknowledg I. I/We further certificating from	Gas Diesel Cother Consultar	hat the soil site shown are soil described as year way delayir	Person to Co LARRY FAX# 949-45  FOX. Qty: D  OF The second	o-5200 ontact: MOOTHAR  0-5210 escription of Di ein is taken ent ing has been a d certify that s insported from such site.	elivery  irely from to	Transporter's I 45064 Customer Accc 10001 Gross Weight  (SSUO)  hose soils descript to such soil being deliveretion Site to the	3358468: OOT No.: Tount Number  93 Tare Weight  24120  26 in the that would in exactly in Designate  Month  Month  Month  Month	Net V
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B.E.S.I. 25971 TO LAKE FOR  Description  Sand   Control Clay   Control Clay   Control Clay   Control Clay   Control Clay   Condition as a without off-loa Print or Type Name  Discrepancies:	of Soil  Organic O Other O Oth	Moisture Content  0-10% 10-20% 20%-over 0-10-20% 20%-over 20%-over.  ant's certification: ed by me/us for the  Generator  I/We acknowledg I. I/We further certificating from	Contaminate  Gas Diesel Cother  Gas Diesel Cother  If We certify the Generation Service of the consultary that this owner in any to the contamination of the	hat the soil site shown in soil describes way delayir	Person to Co LARRY FAX#: 949-45  Tox. Qty: D  Tox. Qty: D	ontact: MOOTHAR  O-5210 escription of Description o	elivery  irely from to	Transporter's I 45064 Customer Accc 10001 Gross Weight  (SSUO)  hose soils descript to such soil being deliveretion Site to the	3358468: OOT No.: Tount Number  93 Tare Weight  24120  26 in the that would in exactly in Designate  Month  Month  Month  Month	Net V
B.E.S.I. 25971 TO LAKE FOR  Description  Sand   Control Clay   Control Clay   Control Clay   Control Clay   Control Clay   Condition as a without off-loa Print or Type Name  Discrepancies:	of Soil  Organic O Other O Oth	Moisture Content  0-10% 10-20% 20%-over 0-10-20% 20%-over 20%-over.  ant's certification: ed by me/us for the  I/We acknowledg I. I/We further certificating from	Contaminate  Gas Diesel Cother  Gas Diesel Cother  If We certify the Generation Service of the consultary that this owner in any to the contamination of the	hat the soil site shown in soil describes way delayir	Person to Co LARRY FAX# 949-45  TOX. Qty: D	ontact: MOOTHAR  O-5210 escription of Description o	elivery  irely from to	Transporter's I 45064 Customer Accc 10001 Gross Weight  (SSUO)  hose soils descript to such soil being deliveretion Site to the	3358468: OOT No.: Tount Number  93 Tare Weight  24120  26 in the that would in exactly in Designate  Month  Month  Month  Month	Net V  Soil L  alter i  the s

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### **APPENDIX H**

## LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS





2960 FOSTER CREIGHTON DRIVE • NASHVILLE, TENNESSEE 37204 800-765-0980 • 615-726-3404 Fax

3/29/05

ENVIRONMENTAL RESOLUTIONS, INC 10203
GEORGE SALLEY
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project identified below:

Project Name: EXXONMOBIL 18-MLJ

Project Number: .

Laboratory Project Number: 409661.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. Any QC recoveries outside laboratory control limits are flagged individually with an #. Sample specific comments and quality control statements are included in the Laboratory notes section of the analytical report for each sample report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accredidation.

		Page 1
Sample Identification	Lab Number	Collection Date
S-10-B7	05-A37791	3/16/05
S-15-B7	05-A37792	3/16/05
S-20-B7	05-A37793	3/16/05
S-25-B7	05-A37794	3/16/05
S-30-B7	05-A37795	3/16/05
S-35-B7	05-A37796	3/16/05
S-40-B7	05-A37797	3/16/05
S-45-B7	05-A37798	3/16/05
S-50-B7	05-A37799	3/16/05



2960 Foster Creighton Drive . Nashville, Tennessee 37204

800-765-0980 • 615-726-3404 FAX Page 2

Sample Identification

Lab Number

Collection Date

These results relate only to the items tested. This report shall not be reproduced except in full and with permission of the laboratory.

Report Approved By:

Report Date: 3/28/05

Johnny A. Mitchell, Laboratory Director Michael H. Dunn, M.S., Technical Director Pamela A. Langford, Senior Project Manager Eric S. Smith, QA/QC Director

Gail A. Lage, Senior Project Manager Glenn L. Norton, Technical Services Kelly S. Comstock, Technical Services Roxanne L. Connor, Senior Project Manage

Laboratory Certification Number: 01168CA

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2960 FOSTER CREIGHTON DRIVE . NASHVILLE, TENNESSEE 37204

800-765-0980 • 615-726-3404 FAX

#### ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630 Lab Number: 05-A37791 Sample ID: S-10-B7 Sample Type: Soil

Site ID: 18-MLJ

Project:

Project Name: EXXONMOBIL 18-MLJ

Sampler: GEORGE SALLEY

Date Collected: 3/16/05 Time Collected: 8:27 Date Received: 3/17/05

Time Received: 8:00

				Limit of	Limit of	Dilution					
Parameter	Result	Flag	Units	Quantitation	Detection	Factor	Date	Time	Method	Analyst	Batch
	<del></del> -										
*Volatile Organics											

*	** Ethyl-t-butylether	<0.6	U	ug/kg	1.7	0.6	1.	3/24/05	14:09	8260B	J.	Bundy	1083
*	** tert-methyl amyl ether	<0.7	U	ug/Kg	1.7	0.7	1	3/24/05	14:09	8260B	J.	Bundy	1083
*	** Tertiary butyl alcohol	<9.74	U	ug/kg	42.7	9.74	1.	3/24/05	14:09	8260B	J.	Bundy	1083
*	** Benzene	6.3		ug/kg	1.7	0.7	1.	3/24/05	14:09	8260B	J.	Bundy	1083
*	** Ethylbenzene	2.6		ug/kg	1.7	0.4	1.	3/24/05	14:09	8260B	J.	Bundy	1083
*	** Toluene	3.5		ug/kg	1.7	0.4	1.	3/24/05	14:09	8260B	J.	Bundy	1083
*	** Xylenes (Total)	11.3		ug/kg	1.7	1.1	1.	3/24/05	14:09	8260B	J.	Bundy	1083
*	** Methyl-t-butyl ether	<0.8	U	ug/kg	1.7	0.8	1.	3/24/05	14:09	8260B	J.	Bundy	1083
	Ethanol	<129.	U	ug/kg	171.	129.	1.	3/24/05	14:09	8260B	J.	Bundy	1083
*	** Diisopropyl ether	<0.7	U	ug/kg	1.7	0.7	1.	3/24/05	14:09	8260/SA05-77	J.	Bundy	1083
4	** Methanol	< 340	U	ug/kg	5000	340	1.	3/27/05	15:57	8015	К.	Roberso	2768
	**TPH-GC												

** TPH (GRO C4-C12)	750 J	ug/kg	4870	310	1.	3/23/05	20:53	CA-LUFT	H. Wagner	2950
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\*\*TPH-GC

** TPH (Diesel Range,C13-C22)	67700	ug/kg	10000	3400	10.	3/19/05	16:36	8015BM	B. Yanna	6393
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\*\*Miscellaneous Parameters

% Dry Weight 79.2 3/22/05 10:57 CLP K. Turner 2952

The TRPH-Diesel surrogate was diluted out due to sample matrix.



# ANALYTICAL REPORT

Laboratory Number: 05-A37791

Sample ID: S-10-B7

Page 2

Sample Extraction Data

Wt/Vo]

	MC\ AOT					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	49.8 ml	1.0 ml	3/18/05	16:18	K. Turner	3550
Volatile Organic	s 5.85 g	5.0 ml	3/16/05	8:27	J. Bundy	5035
BTX Prep	5.13 g	5.0 ml	3/19/05	10:05	H. Wagner	5035

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	90.	63 127.
GC FID Surrogate	84.0	50 150.
VOA Surr, 1,2-DCAd4	97.	72 134.
VOA Surr Toluene-d8	106.	76 122.
VOA Surr, 4-BFB	114.	60 138.
VOA Surr, DBFM	100.	75 137.

- ND = Not detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- J = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with J as estimated.
- B = Analyte was detected in the method blank.
- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



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#### ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630

Project:

Project Name: EXXONMOBIL 18-MLJ

Sampler: GEORGE SALLEY

Lab Number: 05-A37792 Sample ID: S-15-B7

Sample Type: Soil Site ID: 18-MLJ

Date Collected: 3/16/05

Time Collected: 8:31

Date Received: 3/17/05

Time Received: 8:00

					Limit of	Limit of	Dilutio	on				
	Parameter	Res	ult Fla	g Units	Quantitation	Detection	Factor	Date	Time	Method	Analyst	Batch
			<b></b>									
	**Volatile Organics											
* *	Ethyl-t-butylether	<0.6	U	ug/kg	1.6	0.6	1.	3/24/05	14:40	8260B	J. Bundy	1083
* *	tert-methyl amyl ether	<0.6	υ	ug/Kg	1.6	0.6	1	3/24/05	14:40	8260B	J. Bundy	1083
* *	Tertiary butyl alcohol	<8.99	U	ug/kg	39.4	8.99	1.	3/24/05	14:40	8260B	J. Bundy	1083
* *	Benzene	0.9	J	ug/kg	1.6	0.6	1.	3/24/05	14:40	8260B	J. Bundy	1083
* *	Ethylbenzene	<0.4	U	ug/kg	1.6	0.4	1.	3/24/05	14:40	8260B	J. Bundy	1083
* *	Toluene	<0.4	υ	ug/kg	1.6	0.4	1.	3/24/05	14:40	8260B	J. Bundy	1083
* *	Xylenes (Total)	<1.0	U	ug/kg	1.6	1.0	1.	3/24/05	14:40	8260B	J. Bundy	1083
* *	Methyl-t-butyl ether	<0.7	U	ug/kg	1.6	0.7	1.	3/24/05	14:40	8260B	J. Bundy	1083
	Ethanol	<119.	U	ug/kg	158.	119.	1.	3/24/05	14:40	8260B	J. Bundy	1083
* 1	Diisopropyl ether	<0.6	U	ug/kg	1.6	0.6	1.	3/24/05	14:40	8260/SA05-77	J. Bundy	1083
* *	Methanol	<320	U	ug/kg	5000	320	1.	3/27/05	16:58	8015	K. Roberso	2768
	**TPH-GC											
* 1	* TPH (GRO C4-C12)	<310	U	ug/kg	4760	310	1.	3/23/05	21:21	CA-LUFT	H. Wagner	2950
	**TPH-GC											
* 1	* TPH (Diesel Range, C13-C22)	520	J	ug/kg	1000	340	1.	3/19/05	16:56	8015BM	B. Yanna	6393
	**Miscellaneous Parameto	ers										
	% Dry Weight		73.8	8				3/22/05	10:57	CLP	K. Turner	2952



# ANALYTICAL REPORT

Laboratory Number: 05-A37792

Sample ID: S-15-B7

Page 2

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# Sample Extraction Data

	Wt/Vol					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	50.1 m	1.0 ml	3/18/05	16:18	K. Turner	3550
Volatile Organic	s 6.34 g	5.0 ml	3/16/05	8:31	J. Bundy	5035
BTX Prep	5.25 g	5.0 ml	3/19/05	10:05	H. Wagner	5035

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	92.	63 127.
TPH Hi Surr., o-Terphenyl	99.	35 135.
GC FID Surrogate	79.0	50 150.
VOA Surr, 1,2-DCAd4	95.	72 134.
VOA Surr Toluene-d8	110.	76 122.
VOA Surr, 4-BFB	113.	60 138.
VOA Surr. DBFM	100.	75 137.

- ND = Not detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- $\mathtt{J}$  = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with  $\mathtt{J}$  as estimated.
- B = Analyte was detected in the method blank.
- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



#### ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630

Project:

Project Name: EXXONMOBIL 18-MLJ

Sampler: GEORGE SALLEY

Lab Number: 05-A37793 Sample ID: S-20-B7

Sample Type: Soil Site ID: 18-MLJ

Date Collected: 3/16/05

Time Collected: 8:40

Date Received:

3/17/05

Time Received: 8:00

									. <b></b>		
				Limit of	Limit of	Dilutio	on			÷	
Parameter	Res	ult Flag	Units	Quantitation	Detection	Factor	r Date	Time	Method	Analyst	Batch
											<b>-</b> -
**Volatile Organics											
** Ethyl-t-butylether	<0.5	υ	ug/kg	1.5	0.5	1.	3/24/05	15:10	8260B	J. Bundy	1083
** tert-methyl amyl ether	<0.6	Ŭ	ug/Kg	1.5	0.6	1	3/24/05	15:10	8260B	J. Bundy	1083
** Tertiary butyl alcohol	<8.41	U	ug/kg	36.9	8.41	1.	3/24/05	15:10	8260B	J. Bundy	1083
** Benzene	2.5		ug/kg	1.5	0.6	1.	3/24/05	15:10	8260B	J. Bundy	1083
** Ethylbenzene	9.7		ug/kg	1.5	0.4	1.	3/24/05	15:10	8260B	J. Bundy	1083
** Toluene	7.5		ug/kg	1.5	0.4	1.	3/24/05	15:10	8260B	J. Bundy	1083
** Xylenes (Total)	56.7		ug/kg	1.5	1.0	1.	3/24/05	15:10	8260B	J. Bundy	1083
** Methyl-t-butyl ether	<0.7	U	ug/kg	1.5	0.7	1.	3/24/05	15:10	8260B	J. Bundy	1083
Ethanol	<111.	U	ug/kg	147.	111.	1.	3/24/05	15:10	8260B	J. Bundy	1083
** Diisopropyl ether	<0.6	U	ug/kg	1.5	0.6	1.	3/24/05	15:10	8260/SA05-77	J. Bundy	1083
** Methanol	<290	U	ug/kg	5000	290	1.	3/27/05	17:04	8015	K. Roberso	2768
**TPH-GC											
** TPH (GRO C4-C12)	<310	U	ug/kg	4740	310	1.	3/23/05	21:50	CA-LUFT	H. Wagner	2950
**TPH-GC											
** TPH (Diesel Range,C13-C22	550	J	ug/kg	1010	340	1.	3/19/05	17:17	8015BM	B. Yanna	6393
**Miscellaneous Param	neters	87.2	<b>ો</b>				3/22/05	10:57	CLP	K. Turner	2952



# ANALYTICAL REPORT

Laboratory Number: 05-A37793

Sample ID: S-20-B7

Page 2

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Sample Extraction Data

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I	Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
-							
	TPH-D	49.5 n	nl 1.0 ml	3/18/05	16:18	K. Turner	3550
	Volatile Organic	s 6.78 g	g 5.0 ml	3/16/05	8:40	J. Bundy	5035
	BTX Prep	5.27 9	g 5.0 ml	3/19/05	10:05	H. Wagner	5035

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	93.	63 127.
TPH Hi Surr., o-Terphenyl	99.	35 135.
GC FID Surrogate	93.0	50 150.
VOA Surr, 1,2-DCAd4	93.	72 134.
VOA Surr Toluene-d8	112.	76 122.
VOA Surr, 4-BFB	137.	60 138.
VOA Surr, DBFM	101.	75 137.

- ND = Not detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- $\mathtt{J}$  = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with  $\mathtt{J}$  as estimated.
- B = Analyte was detected in the method blank.
- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



#### ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

U

U

<0.4

<0.4

<1.1 U

ug/kg

ug/kg

ug/kg

1.7

1.7

1.7

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630 Lab Number: 05-A37794 Sample ID: S-25-B7 Sample Type: Soil

Site ID: 18-MLJ

Project:

Project Name: EXXONMOBIL 18-MLJ

Sampler: GEORGE SALLEY

Date Collected: 3/16/05 Time Collected: 8:50

Date Received: 3/17/05

3/24/05 15:41 8260B

3/24/05 15:41 8260B

3/24/05 15:41 8260B

J. Bundy

J. Bundy

J. Bundy

1083

1083

1083

Time Received: 8:00

							. <b>.</b>			<b></b> -		
	Parameter	Res	ult F	lag Units	Limit of Quantitation	Limit of Detection			Time	Method	Analyst	Batch
		<b>-</b>										
	**Volatile Organics											
* *	Ethyl-t-butylether	<0.6	U	ug/kg	1.7	0.6	1.	3/24/05	15:41	8260B	J. Bundy	1083
* *	tert-methyl amyl ether	<0.7	U	ug/Kg	1.7	0.7	1.	3/24/05	15:41	8260B	J. Bundy	1083
*	Tertiary butyl alcohol	<9.73	U	ug/kg	42.7	9.73	1.	3/24/05	15:41	8260B	J. Bundy	1083
* *	Benzene	<0.7	U	ug/kg	1.7	0.7	1.	3/24/05	15:41	8260B	J. Bundy	1083

0.4

1.1

1.

1.

1.

*	* Methyl-t-butyl ether	<0.8	U	ug/kg	1.7	0.8	1.	3/24/05	15:41	8260B	J. Bundy	1083
	Ethanol	<129.	υ	ug/kg	171.	129.	1.	3/24/05	15:41	8260B	J. Bundy	1083
*	* Diisopropyl ether	<0.7	U	ug/kg	1.7	0.7	1.	3/24/05	15:41	8260/SA05-77	J. Bundy	1083
*	* Methanol	<340	U	ug/kg	5000	340	1.	3/27/05	17:10	8015	K. Roberso	2768

*	* T	PH	-G	Ç

\*\* Ethylbenzene

\*\* Xylenes (Total)

\*\* Toluene

** TPH (GRO C4-C12)	<310 U	ug/kg 5010	310 1.	3/23/05	22:19 CA-LUFT	H. Wagner	2950

## \*\*TPH-GC

** TPH	(Diesel Range,C13-C22)	760	J	ug/kg	1000	340	1.	3/19/05	17:37	8015BM	B. Yanna	6393
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## \*\*Miscellaneous Parameters



# ANALYTICAL REPORT

Laboratory Number: 05-A37794

Sample ID: S-25-B7

Page 2

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Sample Extraction Data

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Parameter	Extracted E	xtract Vol	Date	Time	Analyst	Method
TPH-D	49.9 ml	1.0 ml	3/18/05	16:18	K. Turner	3550
Volatile Organic	s 5.86 g	5.0 ml	3/16/05	8:50	J. Bundy	5035
BTX Prep	4.99 g	5.0 ml	3/19/05	10:05	H. Wagner	5035

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	93.	63 127.
TPH Hi Surr., o-Terphenyl	100.	35 135.
GC FID Surrogate	104.	50 150.
VOA Surr, 1,2-DCAd4	95.	72 134.
VOA Surr Toluene-d8	105.	76 122.
VOA Surr, 4-BFB	107.	60 138.
VOA Surr, DBFM	100.	75 137.

- ND = Not detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- $\mathtt{J}$  = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with  $\mathtt{J}$  as estimated.
- B = Analyte was detected in the method blank.
- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



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# ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630

Lab Number: 05-A37795 Sample ID: S-30-B7

Sample Type: Soil Site ID: 18-MLJ

Project:

Project Name: EXXONMOBIL 18-MLJ

Sampler: GEORGE SALLEY

Date Collected: 3/16/05 Time Collected: 8:53

Date Received: 3/17/05

Time Received: 8:00

											·	
	Parameter	Res	ult Fla	ag Units	Limit of Quantitation	Limit of Detection			Time	 ≥ Method	Analyst	Batch
	**Volatile Organics											
** E	thyl-t-butylether	<0.6	U	ug/kg	1.6	0.6	1.	3/24/05	16:12	8260B	J. Bundy	1083
** t	ert-methyl amyl ether	<0.7	U	ug/Kg	1.6	0.7	1	3/24/05	16:12	8260B	J. Bundy	1083
** T	Pertiary butyl alcohol	<9.31	U	ug/kg	40.8	9.31	1.	3/24/05	16:12	8260B	J. Bundy	1083
** E	Benzene	2.5		ug/kg	1.6	0.7	1.	3/24/05	16:12	8260B	J. Bundy	1083
** E	Ethylbenzene	1.1	J	ug/kg	1.6	0.4	1.	3/24/05	16:12	8260B	J. Bundy	1083
** T	Coluene	<0.4	U	ug/kg	1.6	0.4	1.	3/24/05	16:12	8260B	J. Bundy	1083
** X	(Total)	4.9		ug/kg	1.6	1.1	1.	3/24/05	16:12	8260B	J. Bundy	1083
** N	Methyl-t-butyl ether	<0.7	U	ug/kg	1.6	0.7	1.	3/24/05	16:12	8260B	J. Bundy	1083
E	Sthanol	<123.	U	ug/kg	163.	123.	1.	3/24/05	16:12	8260B	J. Bundy	1083
** [	Diisopropyl ether	<0.7	U	ug/kg	1.6	0.7	1.	3/24/05	16:12	8260/SA05-7	7 J. Bundy	1083
** I	Methanol	<330	U	ug/kg	5000	330	1.	3/27/05	17:17	8015	K. Robers	2768
	**TPH-GC											
** "	TPH (GRO C4-C12)	<310	υ	ug/kg	4870	310	1.	3/33/05	22.40	CA-LUFT	н. Wagner	2950
1	1FH (GRO C4-C12)	C310	U	ug/ kg	4670	310	1.	3/23/03	22.40	CA DOIT	n. wagner	2350
	**TPH-GC											
	- "Ten-GC											
** 7	TPH (Diesel Range,C13-C22)	6370		ug/kg	1010	340	1.	3/20/05	16:35	8015BM	B. Yanna	6393
•	(210001 Hange, 010 011,			-5,5				-,,				
	**Miscellaneous Paramete	ers									*	
9	b Dry Weight	•	82.2	8				3/22/05	10:57	CLP	K. Turner	2952



# ANALYTICAL REPORT

Laboratory Number: 05-A37795

Sample ID: S-30-B7

Page 2

Sample Extraction Data

Wt/	Vol
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		,					
]	Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
				- / /			
	TPH-D	49.6 m	1 1.0 ml	3/18/05	16:18	K. Turner	3550
	Volatile Organic	s 6.12 g	5.0 ml	3/16/05	8:53	J. Bundy	5035
	BTX Prep	5.13 g	5.0 ml	3/19/05	10:05	H. Wagner	5035

Surrogate	% Recovery	Target Range		
UST surr-Trifluorotoluene	91.	63 127.		
TPH Hi Surr., o-Terphenyl	82.	35 135.		
GC FID Surrogate	93.0	50 150.		
VOA Surr, 1,2-DCAd4	94.	72 134.		
VOA Surr Toluene-d8	105.	76 122.		
VOA Surr, 4-BFB	103.	60 138.		
VOA Surr, DBFM	99.	75 137.		

- ND  $\simeq$  Not detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- ${\tt J}$  = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with  ${\tt J}$  as estimated.
- B = Analyte was detected in the method blank.
- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



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# ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630

Project:

Project Name: EXXONMOBIL 18-MLJ

Sampler: GEORGE SALLEY

Lab Number: 05-A37796

Sample ID: S-35-B7 Sample Type: Soil Site ID: 18-MLJ

Date Collected: 3/16/05 Time Collected: 9:00

Date Received: 3/17/05

Time Received: 8:00

	-												
							 Limit of	Dilutic	 on				
	Parameter	Res	ult F	lag Un:	its	Quantitation	Detection	Factor	Date	Time	e Method	Analyst	Batch
	**Volatile Organics												
* *	Ethyl-t-butylether	<0.6	U	ug/l	kg	1.8	0.6	1.	3/24/05	16:42	8260B	J. Bundy	1083
**	tert-methyl amyl ether	<0.7	U	ug/i	Kg	1.8	0.7	1	3/24/05	16:42	8260B	J. Bundy	1083
* *	Tertiary butyl alcohol	<10.3	U	ug/1	kg	45.0	10.3	1.	3/24/05	16:42	8260B	J. Bundy	1083
* *	Benzene	1.3	J	ug/	kg	1.8	0.7	1.	3/24/05	16:42	8260B	J. Bundy	1083
**	Ethylbenzene	2.5		ug/l	kg	1.8	0.4	1.	3/24/05	16:42	8260B	J. Bundy	1083
**	Toluene	<0.4	U	ug/	kg	1.8	0.4	1.	3/24/05	16:42	8260B	J. Bundy	1083
* *	Xylenes (Total)	15.4		ug/	kg	1.8	1.2	1.	3/24/05	16:42	8260B	J. Bundy	1083
**	Methyl-t-butyl ether	<0.8	U	ug/	kg	1.8	0.8	1.	3/24/05	16:42	8260B	J. Bundy	1083
	Ethanol	<136.	U	ug/	kg	180.	136.	1.	3/24/05	16:42	8260B	J. Bundy	1083
* *	Diisopropyl ether	<0.7	U	ug/	kg	1.8	0.7	1.	3/24/05	16:42	8260/SA05-77	J. Bundy	1083
* *	Methanol	<360	U	ug/	kg	5000	360	1.	3/27/05	17:23	8015	K. Roberso	2768
	**TPH-GC										•		
**	TPH (GRO C4-C12)	<310	Ū	ug/	kg	4860	310	1.	3/23/05	23:16	CA-LUFT	H. Wagner	2950
	**TPH-GC												
* *	TPH (Diesel Range, C13-C22)	520	J	ug/	kg	1010	340	1.	3/19/05	18:18	8015BM	B. Yanna	6393
	**Miscellaneous Paramete % Dry Weight	ers	88.8	oj o					3/22/05	10:57	CLP	K. Turner	2952



#### ANALYTICAL REPORT

Laboratory Number: 05-A37796

Sample ID: S-35-B7

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#### Sample Extraction Data

#### Wt/Vol

Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
						<b>-</b>
TPH-D	49.7 m	1 1.0 ml	3/18/05	16:18	K. Turner	3550
Volatile Organic	s 5.56 g	5.0 ml	3/16/05	9:00	J. Bundy	5035
BTX Prep	5.14 g	5.0 ml	3/19/05	11:10	H. Wagner	5035

Surrogate	% Recovery	Target Range		
UST surr-Trifluorotoluene	94.	63 127.		
TPH Hi Surr., o-Terphenyl	92.	35 135.		
GC FID Surrogate	96.0	50 150.		
VOA Surr, 1,2-DCAd4	87.	72 134.		
VOA Surr Toluene-d8	106.	76 122.		
VOA Surr, 4-BFB	115.	60 138.		
VOA Surr. DBFM	98.	75 137.		

- ND = Not detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- ${\tt J}$  = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with  ${\tt J}$  as estimated.
- B = Analyte was detected in the method blank.
- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



2960 FOSTER CREIGHTON DRIVE . NASHVILLE, TENNESSEE 37204

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# ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630

Lab Number: 05-A37797

Sample ID: S-40-B7 Sample Type: Soil Site ID: 18-MLJ

Project:

Project Name: EXXONMOBIL 18-MLJ

Sampler: GEORGE SALLEY

Date Collected: 3/16/05 Time Collected: 9:07

Date Received: 3/17/05
Time Received: 8:00

	<del>-</del>												
	Parameter	Res	ult	Flag	Units	Limit of Quantitation	Limit of Detection			 Tim	e Method		Batch
	••								·		<b></b>		
	**Volatile Organics												
* *	Ethyl-t-butylether	<0.7	U		ug/kg	1.9	0.7	1.	3/24/05	17:13	8260B	J. Bundy	1083
* *	tert-methyl amyl ether	<0.7	U		ug/Kg	1.9	0.7	1	3/24/05	17:13	8260B	J. Bundy	1083
* *	Tertiary butyl alcohol	<10.6	U		ug/kg	46.5	10.6	1.	3/24/05	17:13	8260B	J. Bundy	1083
* *	Benzene	<0.7	U		ug/kg	1.9	0.7	1.	3/24/05	17:13	8260B	J. Bundy	1083
* *	Ethylbenzene	<0.5	U		ug/kg	1.9	0.5	1.	3/24/05	17:13	8260B	J. Bundy	1083
* *	Toluene	<0.5	U		ug/kg	1.9	0.5	1.	3/24/05	17:13	8260B	J. Bundy	1083
* *	Xylenes (Total)	<1.2	U		ug/kg	1.9	1.2	1.	3/24/05	17:13	8260B	J. Bundy	1083
* *	Methyl-t-butyl ether	<0.8	Ü		ug/kg	1.9	0.8	1.	3/24/05	17:13	8260B	J. Bundy	1083
	Ethanol	<140.	U		ug/kg	186.	140.	1.	3/24/05	17:13	8260B	J. Bundy	1083
**	Diisopropyl ether	<0.7	Ü		ug/kg	1.9	0.7	1.	3/24/05	17:13	8260/SA05-77	J. Bundy	1083
* *	Methanol	< 370	U		ug/kg	5000	370	1.	3/27/05	17:35	8015	K. Rober	so 2768
	**TPH-GC												
**	TPH (GRO C4-C12)	<310	U		ug/kg	4940	310	1.	3/23/05	23:45	CA-LUFT	H. Wagne	r 2950
	**TPH-GC					•							
**	TPH (Diesel Range,C13-C22)	730	J		ug/kg	1010	340	1.	3/19/05	18:38	8015BM	B. Yanna	6393
	**Miscellaneous Paramete	rs											
	% Dry Weight		84.7		ક				3/22/05	10:57	CLP	K. Turne	r 2952



# ANALYTICAL REPORT

Laboratory Number: 05-A37797

Sample ID: S-40-B7

Page 2

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Sample Extraction Data

Wt/Vol

Parameter	Extracted I	Extract Vol	Date	Time	Analyst	Method
TPH-D	49.5 ml	1.0 ml	3/18/05	16:18	K. Turner	3550
Volatile Organic	s 5.38 g	5.0 ml	3/16/05	9:07	J. Bundy	5035
BTX Prep	5.06 g	5.0 ml	3/19/05	11:10	H. Wagner	5035

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	93.	63 127.
TPH Hi Surr., o-Terphenyl	92.	35 135.
GC FID Surrogate	97.0	50 150.
VOA Surr, 1,2-DCAd4	92.	72 134.
VOA Surr Toluene-d8	105.	76 122.
VOA Surr, 4-BFB	103.	60 138.
VOA Surr, DBFM	101.	75 137.

- ND = Not detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- ${\tt J}$  = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with  ${\tt J}$  as estimated.
- B = Analyte was detected in the method blank.
- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



2960 Foster Creighton Drive . Nashville, Tennessee 37204

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#### ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630

Lab Number: 05-A37798 Sample ID: S-45-B7 Sample Type: Soil Site ID: 18-MLJ

Project:

Project Name: EXXONMOBIL 18-MLJ

Sampler: GEORGE SALLEY

Date Collected: 3/16/05 Time Collected: 9:13 Date Received: 3/17/05 Time Received: 8:00

Limit of Limit of Dilution Result Flag Units Quantitation Detection Factor Date \*\*Volatile Organics \*\* Ethyl-t-butylether <0.6 U 3/24/05 17:44 8260B ug/kg J. Bundy 1083 \*\* tert-methyl amyl ether <0.7 U ug/Kg 1.8 0.7 1. 3/24/05 17:44 8260B J. Bundy 1083 Tertiary butyl alcohol <10.4 U ug/kg 45.6 10.4 1. 3/24/05 17:44 8260B J. Bundy 1083 \*\* Benzene <0.7 U 3/24/05 17:44 8260B ug/kg 1.8 0.7 1. J. Bundy 1083 \*\* Ethylbenzene <0.5 U ug/kg 1.8 0.5 1. 3/24/05 17:44 8260B J. Bundy 1083 \*\* Toluene <0.5 U ug/kg 1.8 0.5 3/24/05 17:44 8260B J. Bundy 1083 \*\* Xylenes (Total) 1.2 J 1.2 3/24/05 17:44 8260B ug/kg 1.8 1. J. Bundy 1083 \*\* Methyl-t-butyl ether <0.8 U ug/kg 1.8 0.8 3/24/05 17:44 8260B J. Bundy 1083 Ethanol 3/24/05 17:44 8260B <138. U ug/kg 182. 138. 1. J. Bundy 1083 \*\* Diisopropyl ether <0.7 U ug/kg 1.8 0.7 3/24/05 17:44 8260/SA05-77 J. Bundy 1083 1, \*\* Methanol <360 U 1. 3/27/05 17:42 8015 K. Roberso 2768 ug/kg 5000 360 \*\*TPH-GC \*\* TPH (GRO C4-C12) <310 U ug/kg 4970 310 3/24/05 0:13 CA-LUFT H. Wagner 2950 \* \* TPH - GC \*\* TPH (Diesel Range, C13-C22) 440 J ug/kg 1010 340 1. 3/19/05 18:59 8015BM B. Yanna 6393 \*\*Miscellaneous Parameters % Dry Weight 3/22/05 10:57 CLP K. Turner 83.1 2952



# ANALYTICAL REPORT

Laboratory Number: 05-A37798

Sample ID: S-45-B7

Page 2

Sample Extraction Data

Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	49.7 ml	1.0 ml	3/18/05	16:18	K. Turner	3550
Volatile Organic	s 5.48 g	5.0 ml	3/16/05	9:13	J. Bundy	5035
BTX Prep	5.03 g	5.0 ml	3/19/05	11:10	H. Wagner	5035

Surrogate	% Recovery	Target Range		
UST surr-Trifluorotoluene	93.	63 127.		
TPH Hi Surr., o-Terphenyl	100.	35 135.		
GC FID Surrogate	82.0	50 150.		
VOA Surr, 1,2-DCAd4	91.	72 134.		
VOA Surr Toluene-d8	105.	76 122.		
VOA Surr, 4-BFB	104.	60 138.		
VOA Surr, DBFM	98.	75 137.		

- ND = Not detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- J = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with J as estimated.
- B = Analyte was detected in the method blank.
- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



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#### ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10203

GEORGE SALLEY

20372 NORTH SEA CIRCLE LAKE FOREST, CA 92630

Lab Number: 05-A37799 Sample ID: S-50-B7 Sample Type: Soil

Site ID: 18-MLJ

Project: Date Collected: 3/16/05
Time Collected: 9:17

Project: Time Collected: 9:17
Project Name: EXXONMOBIL 18-MLJ Date Received: 3/17/05

Sampler: GEORGE SALLEY Time Received: 8:00

Limit of Limit of Dilution Parameter Result Flag Units Quantitation Detection Factor Date \*\*Volatile Organics \*\* Ethyl-t-butylether <0,6 U ug/kg 3/24/05 18:14 8260B J. Bundy \*\* tert-methyl amyl ether <0.7 U 1. ug/Kg 1.7 0.7 3/24/05 18:14 8260B J. Bundy 1083 \*\* Tertiary butyl alcohol <9.58 U ug/kg 42.0 9.58 1. 3/24/05 18:14 8260B J. Bundy 1083 \*\* Benzene <0.7 U ug/kg 1.7 0.7 1. 3/24/05 18:14 8260B J. Bundy 1083 \*\* Ethylbenzene <0.4 U ug/kg 1.7 0.4 1. 3/24/05 18:14 8260B J. Bundy 1083 \*\* Toluene <0.4 U ug/kg 1.7 0.4 1. 3/24/05 18:14 8260B J. Bundy 1083 \*\* Xylenes (Total) <1.1 U ug/kg 1.7 1.1 3/24/05 18:14 8260B 1. J. Bundy 1083 \*\* Methyl-t-butyl ether <0.8 U ug/kg 1.7 0.8 1. 3/24/05 18:14 8260B J. Bundy 1083 Ethanol <127. U ug/kg 127. 3/24/05 18:14 8260B 168. 1. J. Bundy 1083 \*\* Diisopropyl ether <0.7 U ug/kg 1.7 0.7 1. 3/24/05 18:14 8260/SA05-77 J. Bundy 1083 \*\* Methanol <340 U ua/ka 5000 340 1. 3/27/05 17:48 8015 K. Roberso 2768 \*\*TPH-GC \*\* TPH (GRO C4-C12) <310 U ug/kg 4800 310 1. 3/24/05 0:42 CA-LUFT H. Wagner 2950 \*\*TPH-GC \*\* TPH (Diesel Range, C13-C22) ug/kg 1000 340 1. 3/19/05 19:19 8015BM B. Yanna 6393 \*\*Miscellaneous Parameters % Dry Weight 3/22/05 10:57 CLP K. Turner 84.8 2952



# ANALYTICAL REPORT

Laboratory Number: 05-A37799

Sample ID: S-50-B7

Page 2

Sample Extraction Data

Wt/Vol

	,					
Parameter	Extracted	Extract Vol	Date	Time	Analyst	Method
TPH-D	49.9 ml	1.0 ml	3/18/05	16:18	K. Turner	3550
Volatile Organic	s 5.95 g	5.0 ml	3/16/05	9:17	J. Bundy	5035
BTX Prep	5.21 g	5.0 ml	3/19/05	11:10	H. Wagner	5035

Surrogate	% Recovery	Target Range
UST surr-Trifluorotoluene	94.	63 127.
TPH Hi Surr., o-Terphenyl	92	35 135.
GC FID Surrogate	94.0	50 150.
VOA Surr, 1,2-DCAd4	90.	72 134.
VOA Surr Toluene-d8	104.	76 122.
VOA Surr, 4-BFB	104.	60 138.
VOA Surr, DBFM	99.	75 137.

- $\mbox{ND} = \mbox{Not}$  detected at the limit of Quantitation.
- U = Analyte analyzed for but not detected.
- # = Recovery outside Laboratory historical or method prescribed limits.
- ${\tt J}$  = All results evaluated to the Limit of Detection for reporting. Values below the Limit of Quantitation but above the Limit of Detection are qualified with  ${\tt J}$  as estimated.
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- ${\tt E}$  = Estimated Value above the calibration limit of the instrument.
- All results reported on a wet weight basis.



PROJECT QUALITY CONTROL DATA

Project Number:

Page: 1

# Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Pagovary	Target Bange	O.C. Datah	Crile Corrle
	2	011g. vai.	MS Vai	spike conc	Recovery	Target Range	Q.C. Baten	Spike Sampie
**UST ANALYSIS**								
TPH (Diesel Range, C13-C22)	mg/kg	0.94	12.4	20.0	57	28 143.	6393	05-A37799
TPH (Diesel Range, C13-C22)	mg/kg	0.94	15.5	20.0	73	28 143.	6393	M:05A37799
		•						
	Matrix Spil	ke Recovery						
3 m = 1 m =								
Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
**VOA PARAMETERS**								
Benzene	mg/kg	< 0.0020	0.0308	0.0500	62	53 136.	1083	37737
Benzene	mg/kg	< 0.0020	0.0331	0.0500	66	53 136.	1083	M:37737
Toluene	mg/kg	< 0.0020	0.0251	0.0500	50	43 139.	1083	37737
Toluene	mg/kg	< 0.0020	0.0270	0.0500	54	43 139.	1083	M:37737
VOA Surr, 1,2-DCAd4	% Rec				93	72 134.	1083	
VOA Surr, 1,2-DCAd4	% Rec				92	72 134.	1083	
VOA Surr Toluene-d8	% Rec				104	76 122.	1083	
VOA Surr Toluene-d8	% Rec				107	76 122.	1083	
VOA Surr, 4-BFB	% Rec				100	60 138.	1083	
VOA Surr, 4-BFB	% Rec				113	60 138.	1083	
VOA Surr, DBFM	% Rec				100	75 137.	1083	
VOA Surr, DBFM	% Rec				101	75 137.	1083	
	Matrix Spi	ke Recovery						
Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
******								
**MISC PARAMETERS**								-
Methanol	mg/kg	< 5.00	39.9	50.0	80	40 - 140	2768	05-A37796
Methanol	mg/kg	< 5.00	48.0	50.0	96	40 - 140	2768	M:05A37796
	J. J						2,00	



# PROJECT QUALITY CONTROL DATA

Project Number:

Page: 2

# Matrix Spike Duplicate

Annalasta		0	P 1 d t .	222	* ! _ ! _	0.0.0.0.0
Analyte	units	Orig. val.	Duplicate	KPD	rimit	Q.C. Batch
**UST PARAMETERS**						
TPH (Diesel Range, C13-C22)	mg/kg	12.4	15.5	22.22	51.	6393
	Matrix Spike	e Duplicate				
Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
**VOA PARAMETERS**						
Benzene	mg/kg	0.0308	0.0331	7.20	34.	1083
Toluene	mg/kg	0.0251	0.0270	7.29	39.	1083
VOA Surr, 1,2-DCAd4	% Rec		92.			1083
VOA Surr Toluene-d8	% Rec		107.			1083
VOA Surr, 4-BFB	% Rec		113.			1083
VOA Surr, DBFM	% Rec		101.			1083
	Matrix Spike	e Duplicate				
Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
**MISC PARAMETERS**						
Methanol	mg/kg	39.9	48.0	18.43	50	2768
I	Caboratory Co	ontrol Data				
Analyte	units	Known Val.	Analyzed Val	% Recover	y Targe	et Range Q.C
**UST PARAMETERS**						
TPH (Diesel Range, C13-C22)	mg/kg	20.0	16.9	84	54	- 126 63



PROJECT QUALITY CONTROL DATA

Project Number:

Page: 3

#### Laboratory Control Data

Analyte	units Known Val.		Applymed Wal	% Doggersoms	Manage Barrer	0.0 0.0
		KHOWH VAI.	Anaryzed var	% Recovery	Target Range	Q.C. Batch
**VOA PARAMETERS**						
Ethyl-t-butylether	mg/kg	0.0500	0.0517	103	67 - 137	1083
tert-methyl amyl ether	mg/Kg	0.0500	0.0556	111	64 - 142	1083
Tertiary butyl alcohol	mg/kg	0.500	0.409	82	36 - 159	1083
Benzene	mg/kg	0.0500	0.0469	94	76 - 124	1083
Ethylbenzene	mg/kg	0.0500	0.0531	106	70 - 128	1083
Toluene	mg/kg	0.0500	0.0532	106	72 - 125	1083
Xylenes (Total)	mg/kg	0.150	0.159	106	71 - 129	1083
Methyl-t-butyl ether	mg/kg	0.0500	0.0515	103	67 - 138	1083
Ethanol	mg/kg	5.00	6.52	130	48 - 159	1083
Diisopropyl ether	mg/kg	0.0500	0.0466	93	70 - 131	1083
Methanol	mg/kg	50.0	58.0	116	72 - 124	2768
VOA Surr, 1,2-DCAd4	% Rec			88	72 - 134	1083
VOA Surr Toluene-d8	% Rec			106	76 - 122	1083
VOA Surr, 4-BFB	% Rec			104	60 - 138	1083
VOA Surr, DBFM	% Rec			99	75 - 137	1083
L	aboratory Cont	rol Data				
Des lasta						
Analyte	units		Analyzed Val	_	Target Range	
**MISC PARAMETERS**						
Methanol	ma /1	50.0	50.0			
Methanor	mg/kg	50.0	58.0	116	72 - 124	2768
	Blank Data					
Analyte	Blank Va	lue Units	Q.C. Batch	Date Analyz	ed Time Analy	zed
		<b></b>				
**UST PARAMETERS**						
TPH (Diesel Range, C13-C22)	0.	70 mg/kg	6393	3/19/05	15:14	
(540001 hange, 615 622)	0.	, o mg/kg	03.73	3/13/03	10:14	



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# PROJECT QUALITY CONTROL DATA

Project Number:

Page: 4

Analyte	Blank Value

Units Q.C. Batch Date Analyzed Time Analyzed

\*\*UST PARAMETERS\*\*

UST surr-Trifluorotoluene

93. % Recovery 2950 3/23/05 17:27

Blank Data

Blank Data

Analyte **VOA PARAMETERS**	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
Ethyl-t-butylether	< 0.0007	mg/kg	1083	3/24/05	13:38
tert-methyl amyl ether	< 0.0008	mg/Kg	1083	3/24/05	13:38
Tertiary butyl alcohol	< 0.0114	mg/kg	1083	3/24/05	13:38
Benzene	< 0.0008	mg/kg	1083	3/24/05	13:38
Ethylbenzene	< 0.0005	mg/kg	1083	3/24/05	13:38
Toluene	< 0.0005	mg/kg	1083	3/24/05	13:38
Xylenes (Total)	< 0.0013	mg/kg	1083	3/24/05	13:38
Methyl-t-butyl ether	< 0.0009	mg/kg	1083	3/24/05	13:38
Ethanol	< 0.151	mg/kg	1083	3/24/05	13:38
Diisopropyl ether	< 0.0008	mg/kg	1083	3/24/05	13:38
VOA Surr, 1,2-DCAd4	94.	% Rec	1083	3/24/05	13:38
VOA Surr Toluene-d8	107.	% Rec	1083	3/24/05	13:38
VOA Surr, 4-BFB	106.	% Rec	1083	3/24/05	13:38
VOA Surr, DBFM	99.	% Rec	1083	3/24/05	13:38

### Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed

<sup>\*\*</sup>MISC PARAMETERS\*\*

Methanol < 10.0 mg/kg 2768 3/27/05 15:57

End of Report for Project 409661

<sup># =</sup> Value outside Laboratory historical or method prescribed QC limits.



# .Nashville Division

# **COOLER RECEIPT FORM**

BC#



Client Name: ENU Resolutions Cooler Received/Opened On: Accessioned By:Paul R. Buckingham II Log-in Personnel Signature 1. Temperature of Cooler when triaged: 2.9 Degrees Celsius Were custody seals on outside of cooler?..... Ì.NO....NA a. If yes, how many and where: Were custody papers properly filled out (ink, signed, etc)? (YES)...NO...NA 8. What kind of packing material used? Bubblewrap **Peanuts** Vermiculite Other None 9. Cooling process: Íce Ice-pack Ice (direct contact) Other None Dry ice YES...NO...NA 11. Were all container labels complete (#, date, signed, pres., etc)?..... 12. Did all container labels and tags agree with custody papers?..... YES...NO...NA YES...NO...NA 14. a. Were VOA vials received?.... 15. Was sufficient amount of sample sent in each container?.....(YES)..NO...NA 16. Were correct preservatives used? (YES.).NO...NA If not, record standard ID of preservative used here 18. Indicate the Airbill Tracking Number (last 4 digits for Fedex only) and Name of Courier below: 9876 Fed-Ex **UPS** Velocity DHL Route Off-street Misc.

19. If a Non-Conformance exists, see attached or comments below:



Nashville Division 2960 Foster Creighton Nashville, TN 37204 Phone: 615-726-0177 Toll Free: 800-765-0980 Fax: 615-726-3404

# ExonMobil.

Consul	tant Name:	Environmental Resolutions, Inc. TA																														
	Address:									-							ı	nvo	ice	To:	(Ex	onN	lobil l	PM u	nless	othe	rwise	indica	ate)			
City	y/State/Zip:			•														Rep	ort	To:	6	eo:	<u> </u>	2	·u	<u>'Y</u>						
ExxonMobil Te					•														PC	) #: <b>*</b>	Per	ئە د	<b></b>	20	ی ه	79	0					
Consultant P																		aci	lity I	D#	1h	aЬ	1	S be	For		nlt					
Consultant Telephor	ne Number:	949.	457-8	950			Fa	k No	.:_	94	9-	45	7-	8	15K	>	_Si	te A	ddr	ess	_5	<u>ي</u> 0	s" /	405-	12	Lon	B	cr()	<u> 13</u>		L	
Sampler Na																	City	, St	ate,	Zip	L	cal	了	। २०१	<b>h</b>	, 64						
	Signature:				<b>'</b>								_	R	egu	lato	ry D	istr	ict (	CA)		<u> </u>	ZW	QC7	13							
									Р	rese	rvat	tive		$\mathbf{L}$		Mat	rix					,	Analy	/ze F	or:			$\Box$				
409661		e Sampled	Time Sampled	No. of Containers Shipped	q	Composite	Field Filtered	Methanol	Sodium Bisulfate	nol (blue Label) NaOH ( Orange Label)	H <sub>2</sub> SO <sub>4</sub> Plastic (Yellow Label)	O₄ Glass(Yellow Label)	HNO <sub>3</sub> (Red Label)	Groundwater	Wastewater	Drinking Water	ge	Other (specify):	TPWA(Cal LUET)		Mutheral Pois8	BTEX! COUCK	2 borg					(a) TAT (P. 5 Call of the Call	KUSH I AT (Pre-Schedule) TAT request (in Bus. Days)	Fax Results (yes or no)	Due Date of Report	
ample ID or Field ID		Date	i i i	ş	Grab	Con	Fie	Meth		Nag S	H <sub>2</sub> S(	H <sub>2</sub> S(		Ö	Was	Drin	Soil	g	1	F	کے	FBT	S					<u> </u>	<u>3</u>   <u>≥</u>	Fax	Due	
3-10-137 3"	1251	3/16/	us 827	4	X			<b>¥</b>	×								X	3	M	y	X	X										
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Nashville Division 2960 Foster Creighton Nashville, TN 37204 Phone: 615-726-0177 Toll Free: 800-765-0980 Fax: 615-726-3404

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